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Implementing an Integrated Care Pathway For General Foot Screening

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Abstract

It is evident from the literature that foot problems can lead to discomfort, pain, ulceration and increased risk of falling in older people. Good and timely foot care can help individuals remain independent, active and mobile and, more importantly, prevent footwear related falls in older people. According to Age Action Ireland, the population of Ireland is ageing rapidly and the number of people aged 65 and over will rise from 532,000 in 2011 to almost 1.4 million by 2046. The Health Service Executive currently provides a range of foot care services for older people but these services are not well developed or standardised nationally. This project aims to design and implement an Integrated Care Pathway for general foot care and to improve the quality of the foot clinic services in one of the Health Service Executive nursing homes.

The HSE Change Model was used to guide the implementation of the change project and quantitative tools were used to inform the change process. Data in regards to inappropriate referrals, waiting times and documentation audit were collected prior to implementation of the change process and were used to evaluate the impact of the change process, which showed significant improvement as a result of the successful implementation of care pathway. The limitation of the project was the small data size used for evaluation. Based on the success of the change process, the implication for replicating the project was made.

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Abbreviations:

ICP = Integrated Care Pathways

NHS = National Health Service

SPFG = Scotland Personal Footcare Guidance

NICE = National Institute of Health and Clinical Excellence

APC = Australian Physiotherapy Council

MDT = Multidisciplinary team

CSP = Chartered Society of Physiotherapist

HSE = Health Service Executive

ISCP = Irish Society of Chartered Physiotherapist

SOAP = Subjective, Objective, Analysis and Plan

DOCH = Department of Health and Children

SPFFI = Strategy to Prevent Falls and Fractures in Ireland's ageing population

NCPDNM = National Council for the Professional Development of Nursing and Midwifery

NLIAH = National Leadership and Innovation Agency for Healthcare

SCP = Society of Chiropodists and Podiatrists

VCC = Victorian Quality Council

CPD = Continuous Professional Development

PPPG = Policy, protocol, procedure & guidelines

CPSQI = Committee of Patient Safety and Quality Improvement

Chapter 1: Introduction

1.1. Introduction:

Healthcare systems, due to their dynamic and unpredictable nature are often complex and the need for modernisation and integration have become a demanding concern, from both the public and political point of view (Bragato & Jacobs, 2003). Irish healthcare providers are increasingly under pressure to balance the demands on the service within the resources available while maintaining patient safety and quality of care (HSE, 2012a). Development of clinical governance support structures such as the Health Service Executive (HSE) Quality and Patient Safety Directorate (QPS) and governing bodies such as the Health Information Quality Authority (HIQA) promote clinical governance and standardisation of the healthcare system service delivery nationally. Standardised policies, procedures and guidelines based on the best evidence which are developed by key stakeholders are recognised as effective methods of achieving quality and patient safety (Jackson *et al*., 2002; QPS, 2013).

This project will critically analyse, evaluate and discuss the current healthcare practices of the specialised foot clinic services. This project will also discuss the changes intended to be accomplished for developing and implementing ICP using the theoretical change management frameworks.

1.2. Nature of Change:

The author operates a foot clinic in one of the HSE nursing homes providing general foot assessments and treatments for nursing home residents, respite and day care patients. This service is run in collaboration with a private orthotic company. Referrals are received from the multidisciplinary team (MDT) members (Appendix 1). The author commenced his job in the nursing home four years ago and noticed that traditional practices were still operating which were not meeting current physiotherapy practice standards and also identified that the current situation was in need of and ready for a change initiative. Few of the staff members have undergone training in Policy Procedure Protocol Guidelines training programme (PPPG) and were willing to contribute to developing standards in the foot clinic services.

The author identified changes in the current foot clinic practice in his work area which were needed to improve standards of care. There are a variety of HSE initiatives and transformation programmes and quality improvement tools available to support standardised care practices (HSE, 2006; McAuliffe & Vaerenbergh, 2006). The author identified the concept of Integrated Care Pathways (ICP) as one of the tools most appropriate to his work place. Irish health services are beginning to embrace the concept of developing and using ICP across care settings to help deliver a standard and simplified patient journey process (HSE, 2006). According to Irish Health Services Accreditation Board (2004), ICP are protocol or process maps that outline the sequence and timing of clinical interventions for a specific patient group, which is multidisciplinary in nature and may involve both clinical and non-clinical interventions. ICPs are made up of four main components such as timeline,

categories of care activities, intermediate & long-term outcome criteria and variance record.

The overall aim of this project was to design & implement an ICP using these four components for general foot care in the author's workplace, thereby providing structured, well informed foot clinic service to the stakeholders in compliance with the HSE's vision of patient-centred care. The nature of change includes refining the structure and process and ultimately achieving the desired outcome by reducing the variance in practice, standardising procedures, reducing cost and creating a culture of continuous quality improvement (Ellis & Johnson, 1999).

1.3. Rationale for change:

According to National Health Service (NHS) Scotland Personal Foot care Guidance (SPFG) foot care is important for everyone, particularly for older people as good foot health can reduce pain or discomfort, improve confidence, quality of life, and promote independence. Importantly, neglecting foot care needs can contribute to falls, which might otherwise be avoided (NHS, 2013). The current economic situation in Ireland means that the HSE is under more time and financial constraints than ever (HSE, 2013b; HSE, 2012a; HSE, 2010). Considering these constraints there is also a suitable environment for change. According to Strategy to Prevent Falls and Fractures in Ireland's steering group (SPFFI), the economic burden of falls and falls related injuries o the HSE is 402 million Euros per year (SPFFI, 2008).

Every year in Ireland thirty percent of people aged over 65 years of age and fifty percent of those aged over eighty years have a fall (SPFFI, 2008). Victorian County Council (VCC) reports that in Australia, at least sixty percent of older people have one fall per year in residential homes, while thirty percent have falls in hospitals (Victorian County Council, 2004). It is the duty of health care professionals and organisations to provide good quality and safe care to their patients (HIQA, 2008; QPS, 2012; DOHC, 2008). There are many contributing factors to why older people fall more frequently, such as gradual weakening of muscles, neurological deficits, poor balance, foot conditions, poor foot wear and other medical conditions such as diabetes mellitus (DM).

The high prevalence of falls in ambulatory elderly individuals with DM is well established (Crews *et al.,* 2013). VCC (2004) and Menant *et al.* (2008) suggest that poor footwear is the main contributor to slips, falls and trips. They also discovered in their study that eighty one percent of older people are wearing ill-fitting footwear which is either too long or too wide, mainly because of foot pain, corns, ulcers or bunions and also for economic reasons.

According to the NICE (2013) guidelines, assessment of footwear is a very important component of falls prevention strategies in older adults. A very recent study done by Tsur *et al*. (2014) involving one hundred patients concluded that seventy percent of the falls occurred due to intrinsic reasons, of which seventy two percent wore slippers or socks and eighty one percent were wearing inappropriate footwear. This is due to the lack of awareness of knowledge around the area of foot care.

On conducting an internal audit the author identified that the current foot clinic services were not operating efficiently or meeting the recommended standards of practice. The traditional system of care had no formal auditing system in place to evaluate the quality of care and the average waiting time for a patient to be seen in the foot clinic was one month. It is essential that patients with complex foot conditions, such as diabetes are seen as early as possible without any delay (NICE, 2004). This created time pressures for the multidisciplinary team at the foot clinic who wish to practice within international guidelines (NICE 2004) and to deliver a safe and high quality service. According to HIQA standards it is necessary that the service provider conducts regular audits of appointment times to ensure access times for service users are appropriate to their identified needs (HIQA, 2010; 2012).

In addition, the current referral system to the foot clinic service is inappropriate. The majority of referrals received from the MDT are by verbal communication. It is recommended by the Australian Physiotherapy Council (APC) that when collecting patient information written referrals are best practice methods (APC, 2006) . Patients are usually referred regardless of the severity of their foot problems as there are no special screening or admission criteria for referral to this service. Inappropriate referrals are often therefore received from the MDT, resulting in additional time spent by physiotherapists prioritising patients with the highest need for foot clinic services. The lack of knowledge of foot conditions by the referral source (appendix 1) was identified as an issue that needed to be addressed.

Most of the patients attending the foot clinic are elderly patients and the current method of foot care education given to patients, carers and staffs are mostly through

verbal communication. Educational styles vary and elderly patients may not be receptive to all teaching methods (Centeno, 2011). It is recommended that both verbal and written information on foot care education should be given to patients (NHS, 2013). Munro & Steel (1998) recommend increased education of older individuals about their foot care requirements and improved access to foot care services. Introducing information booklets into current practice helps to meet the legal requirement and also supports self management of foot care which may be more cost effective in the long term (Waxman *et al*., 2003). According to the Department of Health, organizations should make health promotion information readily available to patients and their carers (DOHC, 2008).

According to the HSE medical devices and equipment management policy (HSE, 2009a) patients who are provided with a device or piece of medical equipment, should also be provided with an information sheet for its correct use. Information leaflets are currently not available in the author's work area in relation to foot care equipment advice. These identified legal requirements further contributed as the rationale for the change programme undertaken.

As mentioned above, the current foot clinic is supported by collaboration between the HSE and a private foot care agency. A patient assessment is provided and there is a cost involved for this assessment and the provision of footwear. Currently the footwear and other foot related equipment are funded by the HSE. Demands from the HSE financial sector to reduce the costs and procurement of equipment have required the physiotherapist to identify ways of reducing costs whilst maintaining a quality service (HSE, 2014). Spink *et al*., (2011) states that components of their

footwear program combined with patient education is a cost effective way of reducing the incidence of poor footwear in older people which will not only be beneficial for the health system in reducing waiting times, cost and secondary injuries but also will improve the patients quality of life, mobility and their activities of daily living (SCP, 2010).

The foot care clinic documentation practices was another area identified for quality improvement. They currently do not meet best practice guidelines as recommended by the Irish Society of Chartered Physiotherapists (ISCP). Physiotherapy documentation should follow the use of subjective, objective, analysis and plan (SOAP) format notes and any notes containing patient's details should be stored in a secure place (ISCP, 2009; HSE, 2013a; HIQA, 2010). Currently neither of these standards is in place.

1.4. Aims and Objectives:

The aim of the change programme was to establish a culture of continuous quality improvement and standardisation of care. ICPs are a method of continuously evaluating and monitoring the care process for any variance in practice which enhances quality improvements (Smith & Ross, 2007). This is intended to be achieved by designing and implementing an ICP as a multidisciplinary team effort. Team collaboration is necessary for the successful implementation of an ICP and in turn, the ICP can enhance multidisciplinary collaboration (Van-Bussel *et al*., 2013). Specific, Measurable, Achievable, Relevant and Timely (SMART) objectives were

used to specify the intended goals. A brief snapshot of the SMART objectives is below.

1. To introduce a care pathway for general foot care in the author's workplace and measure any variance in practice, such as inappropriate referrals.
2. To reduce the foot clinic appointment waiting times.
3. To undertake and evaluate a staff awareness-training programme and introduce information booklets for care givers and patients.
4. To reduce the overall cost of the foot clinic.
5. To improve documentation standards.

1.5. Summary:

There is a clear conclusion that can be drawn from the literature that footwear and foot conditions are a main contributor to falls in older people that are preventable. According to the Society of Chiropodist and Podiatrist (SCP), improving the current system to give older people better foot care at the right time will directly affect their quality of life while also having a knock-on effect to the health system in terms of cost and efficiency (SCP, 2010). Integrated care pathway is described as a powerful tool for delivering a quality and cost effective healthcare service. This project specifies the interventions required for the patient to progress along the care pathway and places them against a timeframe measured as stated in the SMART objectives. In the following chapters the literature review and the change methodology is outlined. Further change project evaluation and outcomes are also presented.

Chapter 2: Literature Review

2.1 Introduction:

ICP is a widely researched topic, which has several definitions and terminologies that are used interchangeably such as critical pathways, clinical care pathways and care pathways and has been viewed differently by different professionals. There are seventeen terminologies available in the literature for ICP (De Luc *et al*., 2001a). ICPs are both a tool and a concept. The aim of this project is to design an ICP in collaboration with the multidisciplinary team members to ensure successful implementation. This chapter presents a search strategy and review of the literature on ICP. It will discuss the standardisation of care processes using ICPs to reduce variance in practice and will debate the effectiveness of care pathways in relation to the project objectives, which are the reduction in cost, waiting time, variance in practice and will conclude by discussing the implications of the reviewed literature in relation to the author's choice of change project.

2.2 Search Strategy:

The search started by conducting literature reviews on integrated care pathways in the broader context. It was narrowed down to standardisation of care, development and implementation strategies and effectiveness of ICPs and clinical governance in healthcare. A search on the HSE inventory was also carried out to see if any similar project or standards on foot care has been implemented nationally. The search revealed one project on foot care by a public health nurse, which was reported from

a nursing perspective only. The main websites used in searching for evidence-based guidelines and journals are listed in appendix 2. The literature search went back to 1995 to a comprehensive recent review on ICPs by Brufsky & Lokay (2013).

The literature was obtained from journals, web-based databases and current textbooks on integrated care pathways. Internet-based search engines including the RCSI & the HSE library online database and Google scholar were utilised. Over 29 articles, governmental reports on integrated care pathways and five articles and reports on the financial crisis in Ireland were reviewed. Also five books on ICPs were reviewed. The keywords used for literature search, both singly and in combination were: Integrated care pathways, care pathways, healthcare, foot care, falls, quality, change, effectiveness, variance, clinical governance, cost, and standardisation.

2.3 Themes:

Themes emerged from the literature search and were selected to be the main focus of the review. These themes are:

1. Standardisation of care process using ICPs
2. Effectiveness of ICPs
3. Development & implementation of ICPs

2.3.1 Standardisation of care process using ICP:

In Ireland the HSE has introduced a system of clinical governance to improve quality of care. One of the principles of this system is to provide a partnership of quality care

between patients, carers and healthcare providers in achieving safe, easily accessible, timely and high quality and cost efficient services across the continuum of care (HSE, 2012a; QPS, 2013). To achieve this it requires coordination of services, prompt timely interventions and accurate recordings of these interventions. It also needs the ability to record the reasons for variance in practice along the patient's journey (Jackson *et al.*, 2002). Finding radical methods to improve & deliver quality and efficient health services with limited resources is difficult. Pearson *et al*. (1995) strongly argues that ICPs encourage standardisation as a strategy to improve quality and efficiency in healthcare systems. Likewise Cook & Scott, (2005) also suggests that ICPs are a continuous quality improvement tool that can deliver safe and quality health care. Quality improvement is about driving improvements in practice to achieve best practice, which could bring about instant positive changes in delivering quality (Dixon & Pearse, 2011).

According to Bragato & Jacobs (2003), ICPs are standard plans that can identify variances when the progress of patient or any other aspect of the care does not match the established standardised pathway. Reducing variance in the process of providing a service is an effective way of standardising care and improving quality (Cheah, 2000). However the process of standardising care procedures, regardless of the discipline is not an easy task (NCPDNM, 2006). In order to standardise care it requires locally accepted clinical policies, standards and guidelines to be established as a multidisciplinary team approach (Ellis & Johnson, 1999). Policies, procedures and guidelines are an essential tool in improving the quality of healthcare provision, by recommending consistent approaches for best practice (HSE, 2012b).

According to the National Leadership and Innovation Agency for Healthcare (NLIAH), ICPs are interrelated to the clinical governance initiative to implement standardised, best-practice clinical management in healthcare organisations (NLIAH, 2005). Although not driven by economics, standardisation of practice can not only improve the quality of care but also results in significant economic savings (Bragato & Jacob, 2003; CPSQI, 2012). In contrast, health managements may misuse ICPs to reduce patient care costs inappropriately (Campbell *et al.*, 1998). The regulation of clinical practice using ICP will standardise the care delivered by reducing variance in the treatment and improving patient's care (Cheah, 2000; Hassan *et al*., 2002).

However a strong randomised control trial with single blinding study done by Sulch e*t al*. (2000) revealed that ICPs showed no benefit in the area of patient care in a stroke rehabilitation unit and that the traditional care process was effective. Although this is a strong study with strict adherence to inclusion, exclusion criteria and outcome measures, still one could question the validity of the study as it involved a small number of participants in the intervention group (*n =76*) and the study was over a short period of time. Even though blinding is present, it is only single blinding on the patients aspect so bias could still hinder the results from the assessors. Also in this study, a clearly defined variance category was not set out.

According to the National Council for Professional Development for Nursing and Midwifery (NCPDNM), variance are unexpected events that occur in a patient's journey and that could be clinical or non clinical. ICP are one such tool that helps to develop precise standards, streamline processes which can help to outline the sequence and timing of clinical and non clinical interventions for professional staff

caring for a specific patient group (NCPDNM, 2006). Variance can be positive or negative. Positive variance occurs when patient progress outcome is achieved earlier than expected (Cheah, 2000). Variance in clinical practice can also be healthy sometimes as it promotes creativity. According to Schrijvers *et al*. (2012) reduction of job satisfaction may occur due to decrease in variances in practice. ICP are seen as protocol based care, which can also cause dehumanisation of work because employees rarely have room for their own creativity. The relationship between the health professional and the patient becomes less personal and the ICP reduces the patient's choice of care (Schrijvers *et al*., 2012; De Luc *et al*., 2001a).

Although ICPs are believed to be predesigned standardised care plans and are developed for a patient specific group, it can be still individualized. Standardisation and individualization are two parallel trends in the health care system, where standardisation refers to guidelines-based disease management programmes and individualisation refers to shared decision making and personalised care (Pfaff *et al*., 2010). Flexibility is the key in using the ICP (Cheah, 2000). Integrated care pathways can be individualized by the use of variances, to ensure that patient needs are not ignored provided the reasons for variances are justified (De Luc *et al*., 2001a). This also indicates that ICPs are not substitutes for professional judgment. De Luc *et al*., (2001a) argues that ICPs should be seen as a set of preplanned interventions that are not strictly dictatorial but are based on national guidelines that need to be adopted according to the local service needs.

According to HIQA (2012), current practice needs to be audited against national guideline standards or best available evidence to ensure clinical governance and

continuous quality improvement for standardisation of care process. In order to ensure that the quality of care provided meets defined standards, a comprehensive system of clinical audit is required to support clinicians in perceiving where standards are being sustained and where improvements are needed (QPS, 2013). Guezo (2003) suggests that variance in practice should be tracked continuously as it allows for concurrent audit of practice and therefore promotes continuous improving of care process on an ongoing basis.

The regular review of local practice against best practice guidelines is at the core of clinical governance and is necessary for all clinicians to undertake audit as part of continuous monitoring and quality improvement of care (Ellis & Johnson, 1999). Dixon & Pearse (2011) further suggests that quality improvement is not just about setting standards and comparing them actual practice, rather it is about motivating changes in practice which is expected to involve constructing or changing processes and systems to enable improved care. According to Hogan *et al*. (2011), understanding the importance of the ICP in providing a quality healthcare service would only be realised through conducting an audit of the ICP itself. This is what Schmid & Conen (2002) refer to as pathway benchmarking. Pathway construction, pathway implementation and pathway benchmarking results in process improvement (Figure 1) by a combination of providing right-evidence based treatment and a responsible use of resources which forms the basis for a cost-efficient treatment at a set level of quality.

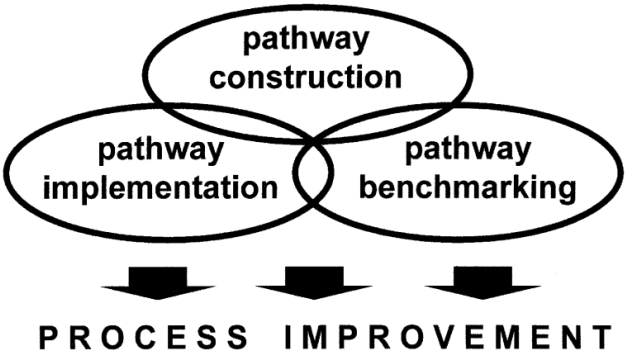


Figure 1: Process Improvement (Schmid & Conen, 2002).

Integrated care pathways not only improve and standardize the care process but also facilitate inter collaborative team working and also address other aspects such as documentation, patient & staff education (Pearson *et al*., 1995)

2.3.2 Effectiveness of ICP's

Integrated care pathways are effective when implemented correctly. There are many benefits to ICPs, more so than the limitations, although several authors would argue over whether there are benefits with hidden limitations. Most studies analysed had positive effects. Vanahaecht (2007) reports that coordination of care processes was significantly improved with the implementation of ICPs and also that the overall Care Process Self Evaluation Tool (CPSET) score was greatly improved however they also revealed that there was no difference in communication outcomes with patients or families.

According to a strong study done by Brufsky & Lokay (2013), in the area of cancer care, the care pathways helped their physicians to adhere to evidence based practice, reducing variance and improving individual patient's personalised care,

which in turn provided a reduction in cost. However this could question the validity of the study as it is mainly focused on a single case in the area of cancer. El Sakka *et al*. (2006) agrees with all of the above benefits of ICPs and also found that patient flow was a main bonus for the department in which it was introduced. The study by Irving *et al*. (2013) found that ICPs improved results for MDT working. In contrast Atwal & Caldwell (2002) argues that it is difficult to measure team working and in their study no improvement of team processes was noted. Hunter & Segrott (2008) argues that there is a general lack of evidence and understanding in the field of clinical pathways and the measurement of effectiveness and further longitudinal research must be carried out. In contrast Brufsky & Lokay (2013) and Tummers *et al*. (2012) stated that although there may not be experimental evidence for these pathways, it is clear that they do have a positive effect when organised correctly and it is also an important point to note that pathways should not be used as a standalone measure but as a framework to base care processes on and to have a standardised process for all healthcare staff to follow.

Hunter & Sergott (2008) strongly argue that there is an increase in overall efficiency of care process and a decrease in variance while a literature review by Reed *et al*. (2005) suggest that ICPs increased the MDT working, reduced unnecessary referrals, decreased waiting times and improved patient flow. However on the other hand, De Luc *et al*. (2001a) & Pearson *et al*. (1995) argues that ICP's are "*cookbook medicine*" and predetermined stages of care that do not account for unexpected variance. When variance occurs a senior medic can overrule the pathway thus allowing guidance for less experienced medics and health professionals (Irving *et al*., 2013).

In order for ICPs to be effective it is clear from several sources (NCPDNM, 2006) and (De Luc *et al*., 2001a) that the key to a well-managed and successful ICP is clinical governance as mentioned in the introduction. De Luc *et al*. (2001a) and (NCPDNM, 2006) state that leadership is needed within a clinical pathway. If leadership is not followed then fragmentation of the system occurs, as in the UK where some of their ICPs are reportedly not as effective as others (NLIAH, 2005). This allows us to conclude that developing a cohesive, high-level pathway requires individual responsibility and accountability backed by the MDT to ensure all points of view are incorporated and addressed, decreasing the likelihood of lack of communication and in turn improving the quality of care (QPS, 2013; DOHC, 2008).

Effectiveness of an ICP in terms of reduction in waiting time and cost containment is also well documented in the literature (El Sakka *et al*., 2006). The HSE procurement costs are increasing (HSE, 2014) and the waiting times for specialist's appointments are increasing as well. Tummers *et al*. (2012) states that in the high cost area of stroke rehabilitation ICPs are beneficial. They carried out a literature review incorporating fifteen studies all with similar results. They found that ICPs promoted early supported discharge and also better outcomes for their patients. The author believes if it can be so effective in such a broad area as stroke then ICPs may bring a similar standard of improvement to foot care in the elderly. El Sakka *et al*. (2006) argue that significant improvements were noted in patient waiting time in the outpatient department. It is beneficial to note that this is in a similar area to the author's project. In this study they discovered the waiting time was decreased greatly and patient flow was improved while also decreasing the number of secondary complications. This would be a valuable asset in the author's work place if similar

results could be achieved. However, the study by El Sakka *et al*. (2006) is a quantitative piece of research and only a small randomized, controlled trial project and this could question the validity of the study. To assess the effectiveness of an ICP both qualitative and quantitative studies are required (O'Connor, 2013).

Cost is a factor that will be of high importance to the management of any health care industry. By implementing ICP the cost of service provision can be significantly improved. However it does not mean that ICP are an alternative for cost reduction strategies (WHO, 2008). Pearson *et al*. (1995) reports that there was no evidence to date to prove cost effectiveness. However the validity of this article could be questioned as it is very old and new evidence is being published regularly. Brufsky & Lokay (2013), one of the more recent articles, which is qualitative analyses, argues that ICPs are a transparent way of managing cost while also improving patient-centered care.

In contrast, Kodner & Kyriacou (2000) studied two American models for an ICP in the frail elderly and their results showed that there were no significant changes in the cost reduction but increase in the quality of care was more evident. However, as stated by Vanhaecht (2007) minimizing cost should not be a top priority but improving care, which in turn reduces waiting lists, inpatients services and length of care will lower cost. In contrast, Lisney & Morton (2014) argues that not only fiscal responsibility should be promoted as part of the work practice but also entrepreneurship to reduce the cost, so the savings can be used towards other costs. Redesigning care delivery to emphasize more tertiary prevention and avoid unnecessary complication is required to save costs and this requires strong

leadership skills (Emanuel, 2012). The most recent conclusion drawn by many strong articles is that care pathways have a very positive effect but there will always be exceptions and variances (Vlegel Brouwer, 2013). From the literature review it appears that if ICPs are implemented and managed well there are significant benefits to having them in place for the majority of patients

2.3.3 ICP development & Implementation process:

Integrated care pathways are complex systems to develop and implement, and to be effective many aspects must be taken into consideration. ICP should preferably be designed to cope with uncertainty (Keen *et al*., 2006). To begin, a specific problem must be identified, the patient group must be narrowed down and a MDT formed to partake in the formation of the ICP so that all aspects of care can be addressed and all voices heard and the care pathway objectives developed (Ellis & Johnson, 1999; Hassan *et al*., 2003; Hogan *et al*., 2011; De Stampa *et al*., 2010). Foot problems cover an umbrella of several conditions. In context to the author's project, to make it more disease specific, this project is aimed at developing the ICP for general foot care and the patient group is confined to elderly people aged over sixty five years. MDT working enhances shared care and better continuity of care, improved co-ordination of services and is crucial to the successful implementation of the author's project (NLIAH, 2005). Failure to involve the MDT in the construction of the pathway will hinder compliance with the completion of the pathway, owing to a lack of local ownership and trust in the new system of care (Ellis & Johnson, 1999; Keen *et al*., 2006). In most cases when developing an ICP, interventions such as focus groups, Blue Skies Thinking and Plan-Do-Study-Act (PDSA) cycles are used to draw

information from members (NLIAH, 2005). When designing ICPs, the four main pillars that form the base of support (Appendix 3) should be considered (NCPDNM, 2006). Developing ICPs using these four pillars will be further discussed in the planning stage of HSE (2008) change model.

According to NLIAH (2005) and several other articles, staff education is one of the main factors in applying a successful pathway, failing to train and educate staff on the ICP will result in poor adherence to the pathway and guidelines. Staff training supports the integration and team-based approaches and facilitates the updating of information to work in the required manner (HSE, 2009b). This will be further detailed in the next chapter, which is about the change process.

When developing an ICP another factor that is most important is process mapping which is often overlooked (De Luc et al., 2001b). This stage is critical as a completed process map is the foundation for the final integrated pathway document (NCPDNM, 2006). Mapping of an ICP allows current practice and a patient journey to be reviewed and monitored so it helps to identify and effectively troubleshoot the bottlenecks in the system and make the system more efficient. Process mapping also helps to identify the types of activities involved, the inter-relations between the activities and shows the flow of materials, information and people (Slack *et al*., 2004). It also identifies service shortfalls and variances, as healthcare delivery is a human endeavor and variance is part of the process (NCPDNM, 2006; NLIHA, 2005).

Another way of developing ICPs is the four meeting model. The ICP development structure can take the form of four meetings in which particular elements are covered. Before every meeting, preparatory work will need to be conducted by the key members of the development team to create a platform from which to base the agenda of the following meeting (NLIAH, 2005). The author will further discuss the four meeting model in the change management process. Although there are many benefits of implementing ICP, there are also liability issues for the developers. By using care pathway, the process of care is described explicitly and therefore can be open to scrutiny within the organisation and also externally (De Luc *et al*., 2001b).

Integrated care pathways can be implemented through different strategies and are very effective when implemented correctly. They require major organizational change with support structures in place such as an ICP facilitator and buy-in from all staff involved (Hogan *et al*., 2011). The three different types of strategies are Macro, Mezzo and Micro strategies (Reed *et al*., 2005). Macro strategies primarily address societal level changes and are mainly influenced by politics, public pressures and advocacy. Implementing changes at a macro level is very difficult and often a long term process, however ICPs are often pushed from a macro level, an example of this would be in the UK and Netherlands governments which have both put a significant focus on integrated care and offer incentives to improve ICPs (Veeman, 2008).

Mezzo strategies are where health and social organisations are designed to provide specialist services. The author's project is implemented at the mezzo level. ICPs operate in a structure, process and outcome continuum (NCPDNM, 2006). Implementing ICPs at mezzo level are seen to have better results and the approach

focuses on changing the structure and process (Reed *et al*., 2005). This is due to the plan coming from an organisational level, therefore affecting more people than if it is coming from a micro level which comes from an individual or practitioner. If it starts on a smaller scale it does not filter through the systems as well as it does when it comes from an organisational level.

2.4. Summary:

In conclusion, there is a wealth of evidence in favor of ICPs but there will always be some doubt over any measure that proclaims to change so many aspects of a health system. ICPs are of great benefit in most well organised systems in which they are implemented. The literature review identified how ICPs can deliver more standardised care. The effectiveness and benefits of implementing ICPs were identified. Implementing a care pathway requires strong leadership skills and an evidence based change management approach. The author in the next chapter explores various change management theories and the change processes involved in implementing the ICP.

Chapter 3: Change Process

3.1 Introduction:

The Irish healthcare system has undergone a continuous cycle of transformation in the last ten years. Delivering safer, reliable and more efficient healthcare service has become mandatory for all healthcare organizations around the world and service improvement has become the key component for healthcare organization (Davies &

Mannion, 2013).This chapter will explore and analyse various change models and theories and also explore the reason why the HSE change model was selected for this change project. This Chapter will conclude with a summary of the findings.

3.2. Change models and theory:

When it comes to change and change management the key question that appears to be constant in most of the literature is “Why change?”. As the need for change is often unpredictable, it tends to be reactive, irregular, unplanned and often triggered by a situation of organizational crisis (Todnem By, 2005 ; Coghlan & McAuliffe, 2003) . Most of the change models fail due to a lack of vision of the future and a lack of clarity about what they are trying to transform (Kotter, 2007 ; Coghlan & McAuliffe, 2003).

Kurt Levin and John Kotter are considered the most famous purveyors of change management wisdom and have developed their own school of thought. The literature review identified that the emergent and planned change approach still seems to be widely used to define change and that resistance to change plays an important role in the successful implementation of the change process.

3.2.1 Planned Change Model:

Planned change has dominated systems and the theory of change since Lewis’s (1951) work. The work carried out by Kurt Levin which is based on three stage approach, firstly unfreezing, secondly moving to new behavior and finally refreezing the new behavior (Burnes, 2004) has been grounded on the basis of planned change which has acted as a formula for development of various change models such as Reddin's change theory and Leavitt and Havelock's change theories

(Hewitt-Taylor, 2013). In addition, tough field theory, which is an approach to group behaviour, group dynamics which deals with forces operating in groups and action research theory are all based on Kurt Levin's work (Burnes, 2004).

Other theories raised from Levin's model were the Roger (2003) theory, which was a modified and expanded version of Lewin's three-step theory (Hewitt-Taylor, 2013). Roger's (2003) seven-phase theory can still be clustered within Kurt Lewin's three-stage theory as they share the common themes such as identifying the problem and finding the best solution through collaboration (Hewitt-Taylor, 2013). Adding on steps to an existing model and creating a new model can be a recipe for an approach to change, but at the same time it can be viewed as a criticism.

Kurt Levin identified that a planned change model such as force field lacks the permanency in the objectives at new or desired level and that was the reason that he developed the three-step model, which involves an integrated group approach to change (Burnes, 2004). Kurt Lewin promoted an ethical and humanist approach to change and his approach was widely used to address social conflicts, especially between two conflicting groups. Burnes (2004) argues that despite its popularity, Levin's theory of planned approach to change faced criticisms due to the fact that this model is based on small-scale samples and only works well for stable organizations. Planned change theory ignored organizational power and politics and was a top down approach and focused more on specific pre-planned steps for each change project and initiative and was only suitable for incremental change process (Burnes *et al*., 2003). Also planned change is susceptible to failure and careful consideration of change theory can abridge the process for change agents and help

people affected by change to be more responsive (Mitchell, 2013). Although there are many critics of the planned change theory, the author argues that, to successfully implement a change process it is essential to map out the push and pull factors to the change process to get a strong handle on the rationale for change. The author feels that Kurt Lewin's planned change model accomplishes those necessities that map out the sources of potential elements against change and also identifies the natural drivers towards the change process.

3.2.2 Emergent Change model:

In comparison to a planned change, is an emergent change model. These changes arise from local levels and are an informal process where someone from within the system identifies the need for change and it can then progress to make changes on a global level structure. Emergent change is constantly changing and adapting to all the factors that can inhibit or hinder the change process. This is the main benefit of emergent change (Livine-Tarandach & Bartunek, 2009). However, the difficulties with this method is that organisers or management need to act as facilitators to staff as opposed to a more controlling role which was traditionally adopted (Plowman *et al*., 2007).

On the other hand, the emergent approach provides more emphasis on change readiness and facilitating for change (Todnem By, 2005) and is more suitable for uncertain and rapidly changing environment and promotes organizational learning(Burnes *et al*., 2003). John Kotter too has developed an eight-step transformational change model, which is an emergent approach to change, it gives clear guidance to leaders on leading change (Kotter, 2001; Appelbaum *et al*., 2012).

Todnem By (2005) has compared few emergent change models such as Kotter's eight-stage process, Kamter's Ten Commandments for executing change and Luecke's seven steps. Although all these three change models vary in terms of stages and steps they share a set of common themes such as creating a vision and strong leadership and empowering employees (Todnem By, 2005). This is a unique approach of the emergent theories compared to other change theories such as contingency theory, which is based on a mechanistic approach to organisation design.

3.2.3 Merging planned change and emergent change:

Burnes (2004) debates that the planned and emergent approaches to organizational change are contending approaches but should be treated as complementary to each other, meaning that organisations should not consider one single approach to change management. It would appear that connection of the two change systems is the best option, this is where both systems are given equal voice, respect, curiosity and privileges. This method deals with conflicts, dilemmas and increases clarity in the change program on all levels and is continuously improving (Beer & Nohria, 2000). It acknowledges that there is no one blueprint for successfully implementing change. In conclusion it would appear that every organisation is different and requires a different approach (Burnes, 1996). It is clear that the current system needs to be assessed and the possible tensions, obstacles and hindrances noted before embarking on a change program and consideration for both systems must be a priority. The author has chosen the HSE Change Model to implement change in

the author's workplace, which is an organizational development approach to change and has the essence of both planned and emergent concepts.

3.3 Rationale for selecting HSE change model

The HSE Change model was designed taking into account the important factors that can influence success of a change project such as culture, patient centered approach, stakeholders, communication, leadership, shared vision, learning and evaluation, structure and process, teamworking and most importantly balancing stability and change (HSE, 2008). This model gives clear guidance to leaders and managers in balancing emerging change along with the day-to-day tasks. We know that change is complicated and it involves the consideration of components mentioned above when managing the change process.

The HSE change model is based on an organizational development approach, which brings structure and discipline to process and focuses on the human aspect to change.Although an organizational development approach is a planned approach in nature, it facilitates listening to and encouragement of the participitants involved in the change process. Put simply, this model has the influence of both the top-down and bottom -up approach.

Also, the HSE Change model addresses the importance of organizational politics which most of the change models fail to address, especially Kurt Levin's planned theory which was criticized for this reason (Brunes, 2004). Finally, the uniqueness of this model is that it is designed with a vision of guiding consistent change across the

Irish Healthcare System (HSE, 2008). The author's organizational and professional goals match well with the vision of the HSE change model, which is universal access to quality healthcare service and patient centeredness.

The first stage of the HSE change model is the initiation stage, which lays a very strong foundation for planning; process planning can have a significant impact on the success of the change model (Young, 2009)

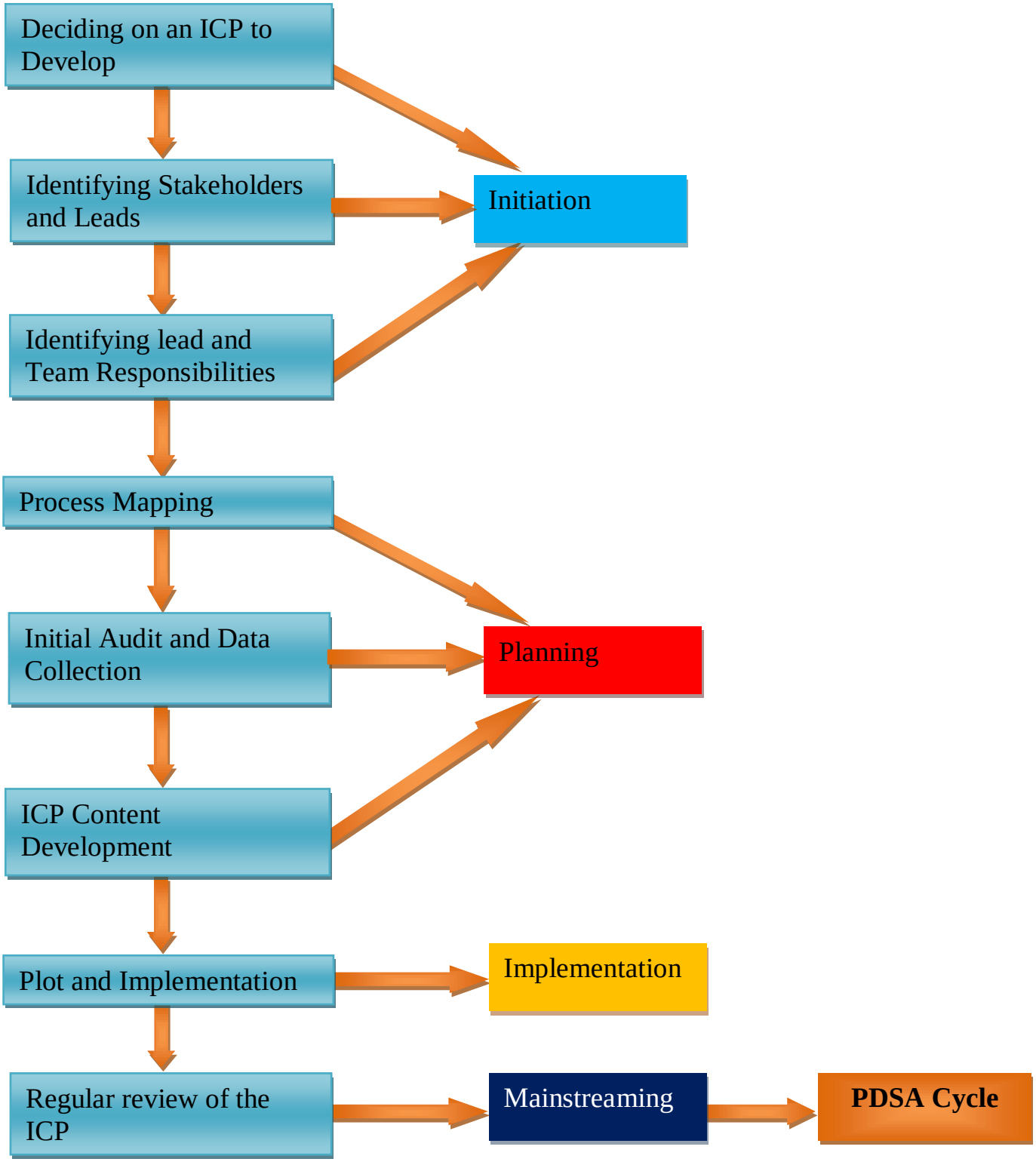
3.4 Change Process

3.4.1 Initiation:

Following investigation of systems for improvement, the author found ICP to be the most appropriate because ICPs are both a tool and a concept (NCPDNM, 2006). The author intends to use the HSE change management model along with the ICP tool as both concepts blend perfectly in implementing a successful change.

The very first step to the HSE change model focuses on considering a case for change, assessing and creating readiness, establishing a sense of shared responsibility, and laying a solid foundation for successful change (HSE, 2008). This step merges well with the first three steps (Figure 2) of the ICP tool (NLIAH, 2005), that is deciding on an ICP topic to develop, identifying stakeholders and leadership roles and identifying lead and team responsibilities. It also analyses which groups and which personnel are necessary for implementation.

Figure 2: ICP development tool and HSE change Model (2008)



The initial drive for this change initiative was the author's special interest in the area of falls and foot pathologies and the rationale was discussed in chapter one. The current foot clinic services have been developed in an ad hoc manner. Overall, the author identified a need for a quality care pathway to standardise the delivery of care process.

The author, who is the lead physiotherapist, discussed the need for an ICP in the departmental service planning meeting with the line manger, acting manager and the team of physiotherapists and carried out process mapping (Appendix 4) to map out the current patient's journey at every stage, identifying bottle necks, unnecessary process and duplication (NCPDNM, 2006). To examine in detail and to understand the organisational problem at root level, a root cause analysis (Appendix 5) was done by asking five core questions: What? When? Who? Why? and Where? Like the 'five whys tool', root cause analysis is a tool that attempts to identify the root cause of the problem (HSE, 2008; Ishikawa, 1985). Following the discussion it was agreed that implementing an ICP into the current foot clinic will help in standardisation and improve efficiency and will meet legal standards.

To progress to the next step it is important to identify the actors and interest group members who will be involved in the policy making and the change process (Varvasovszky & Burgha, 2000). The key stakeholders analysis also helps to identify how much and what kind of attention to pay to each stakeholder. The stakeholder analysis (Appendix 6) identified the physiotherapy manager, the director of care, HIQA and other physiotherapy colleagues, as the high interest and high power individuals who need to be involved.

Establishing a communication channel with these stakeholders and sustaining the communication throughout the change process was essential, so regular meetings took place between the line manger, physiotherapy colleagues and the director of care to keep them well informed about the progress of the project. During one of the meetings with the director of care, a request for a shoe size dispenser was made to secure the required resources for the project. Every employee is part of organizational politics, but people have different levels of power and the change leader must identify and build support with people with high interest and power for effective change process. For successful implementation it is therefore useful to know where the power lies, and who the high interest groups are, where the coalitions and alliances are (Johnson *et al*., 2006) and more specifically, implementing a care pathway requires collaborative dynamics between the stakeholders (De Stampa *et al*., 2010).

For a successful implementation of the change process, managers need to identify which specific groups and individuals will be required to support the change (HSE, 2008). The capacity for change or personal readiness yields an evident unlocking of energy for efficiency and the readiness for change of the individual should be assessed for a successful change (Wright & Thompsen, 1997), especially when integrating evidence based practice into healthcare (Morries *et al*., 2013). The assessment of strategic capabilities of an organisation that are most likely to impact the strategic development and change process has to be analysed to assess if the current strengths, weaknesses, opportunities and threats (SWOT – Appendix 7) are relevant to and capable of dealing with the changes taking place in the organisation (Johnson *et al*., 2006). Strategies don't work well on their own but if they are aligned

with different elements such as structure, skills and styles within the organisation they can then be effective. Strengths and weaknesses of an organisation can also be identified by considering the links between each of these elements (McAuliffe & Van Vaerenbergh, 2006).

One other important factor that could influence change is the organisational culture. Organisation culture is the deeply seated set of values and beliefs carried out by personnel in an organisation and culture can influence creativity and innovation (Martins & Terblanche, 2003). Changing organisational culture does not take place overnight, it changes in a slow pace over long time (Wilson, 2001). Organisational change can influence the organisational commitment of the individual (Manetje & Martins, 2009).Cultural diagnosis is good but it is not just enough to assess cultural diversity in terms of language, values, and identity but assessing the divergence in terms of power, authority, status, and reward (Davies & Mannion, 2013). Roger Harrison explains about power, role, achievement and support and other work by Handy (1985) who developed this idea in a slightly different way in his understanding organisations (1999) with power, role, task and person culture.

Healthcare organisations are better viewed as multiple subcultures, often competing with each other and stratified by a hierarchy of various departments (Davies & Mannion, 2013). On evaluating the author's departmental culture using the Harrison culture questionnaire, the scores of the author's department are found in figure 2 below:

Figure 3: Harrison Cultural Analysis

Power	Role	Task	Self
30	45	35	40

It is very important to identify the culture of an organisation especially in the public healthcare sector where there are different, fragmented professionals with their own norms and values, which could cause some friction in the work environment (Freemantle, 2013). Handy (2000), states that an effective manager has to embrace all these four types of culture within him and be able to emulate each culture in appropriate circumstances.

Further to laying a strong foundation for the planning stage, an internal and external analysis was carried out to analyse the organisational position. Identifying the key drivers for the change process and external influences' impact of change is crucial (Johnson *et al*., 2006). The HSE (2008) model suggests that change is often driven by external factors and assessing the external factors for driving change is vital. The political, economic, social, technological, environment and legal (PESTEL) framework helps to identify the factors that affect the organisations at macro-environmental level (Appendix 8). The author noticed that one such factor that forces the author's change project is the economical factor in PESTEL.

A force field analysis (FFA) which is based on Kurt Levin's field theory was also undertaken to identify the resisting forces and driving forces for the change (Appendix 9). According to Kurt Levin, a force field operates in such a way that resisting forces and driving forces balance at a point (Lewin, 1998; Burnes, 2004).

This is the leverage point at which the level of equilibrium for human activities is established. Identification of both the leverage points and the opportunities for change are very essential in the planning phase (HSE, 2008).

SWOT analysis and FFA revealed that there are lot of drivers in favor of change. One main weakness noted was the lack of knowledge by the referral source of foot referral criteria and foot conditions which could be overcome by educating the staff. Investing in education and improving communication can overcome these barriers (McAuliffe & Van Vaerenbergh, 2006; Coghlan & McAuliffe, 2003; HSE, 2009; NLIAH, 2005) The other weakness identified was the lack of time for the staff nurses in nursing homes and day managers in the community to attend education and training sessions.

Managing change includes the skills of transferring knowledge to reflect new knowledge and insights. When considering a change process it should bring positive benefits for the patient and also to the staff and the organization as a whole (Baulcomb, 2003). Strong leadership and support for the process are vital for implementing a successful change (NLIAH, 2005) especially while implementing a care pathway. Leadership styles play an important role in team building and the leadership styles need to change according to the situation (Stevens *et al*., 2014; de Stampa *et al*., 2010). In contrast Handy (1999) argues that leadership style alone is not the answer to effective leadership. Leadership is about followership, one should be a sort of leader that the followers are comfortable with. The leader (author) approached the nursing clinical practice coordinator and managed to link foot clinic education sessions with nursing journal clubs and in-service training which meant

that the staff are not required to take time off from the floor to attend the education sessions thereby supporting and enabling staff to attend the education session.

At the end of the meeting with the managers and MDT members a project impact statement was created (Appendix 10). The activities carried out in this initiation phase such as stakeholder analysis, resisting and driving forces and the vision for change were synthesised into a business case for change. Organisations that ignore these factors inevitably run into problems (Kotter, 2007). A clear vision for change was established.

3.4.2 Planning:

Following initiation, planning is the focus for the next stage, increasing the readiness and capacity for change in order to create support by creating a shared vision for change (HSE, 2008). Planning was the crucial stage for the author as it is the preparatory phase for the execution and implementation of the new strategies (Young, 2009). At the end of this stage the detailed implementation plan of the project was developed. The initial audit and data collection part of the ICP content development steps coincides well with the planning stage (NLIAH, 2005). In this phase the author is trying to share a vision, and to prepare the implementation plan for the change process in tandem with the ICP development.

3.4.2.1 Building commitment:

To design a successful ICP it requires collaborative team involvement (NLIAH, 2005). From the stakeholder analysis, the author identified the high interest groups and formed an ICP development team. The team consisted of the physiotherapy acting manager, the nurse manager, and physiotherapist colleagues. The four meeting model (NLIAH, 2005) which is a structured approach to developing the ICP was used because of its inclusive nature. Team members were included in developing the patient flow process map. However changes in practice nearly always have an emotional impact on employees (Bowers, 2011) and on reflection, more time could have been invested by meeting with individual team members at the project set-up to allay fears.

In total four meetings took place in the planning session, keeping in mind the four pillars (Appendix 3) as a base for development of ICP. The current gaps in care process were evaluated on the basis of Donabedian's model of structure, process and outcome (Donabedian, 2005). It was agreed by the team that the time line for the development of the ICP was two months. It is recommended that ICP documentation is not for single professional use but needs to be easily accessible and used by the ICP team, which is multidisciplinary (NCPDNM, 2006). This was done as teamwork so as to use every vehicle possible to constantly communicate with the staff members and to build commitment (Kotter, 2007). When designing an ICP, the categories of care intervention have to be addressed (NCPDNM, 2006). The categories of care activities included both nursing and physiotherapy interventions in screening and treating patients for general foot conditions. This

meeting gave a good vision of the future state, clarifying the general direction for change (Kotter, 1996). Also as mentioned in chapter one of the ICP development, Blue Skies Thinking, which is a brainstorming process, was used to devise the desired ICP (Appendix 11). As recommended by (NCPDNM, 2006) every ICP should have an intermediate and long-term outcome. The intermediate and long term outcome criteria was discussed and it was decided by the ICP team, based on literature evidence that promoting self foot care management for common foot conditions would be the long term outcome (NHS, 2013). To facilitate this, it involves patient education and requires support structures such as information leaflets. The intermediate outcomes were to improve current patient symptoms and improve the quality of life and encourage daily foot checks for prevention of any further problems (NHS, 2013).

The final component was developing a variance recording checklist (NCPDNM, 2006) by the ICP team. An ICP checklist for variance tracking was developed which will be used for variance analysis and documentation. Also at these meetings, inclusion and exclusion criteria and new referral forms were developed and a complete ICP document (Appendix 12) was designed as an outcome of ICP team commitment using the four meeting model (Appendix 13). Physiotherapy notes writing protocols were introduced. The next step now is to share the vision in the broader context of the organisation. The author used the education sessions as an opportunity to communicate the vision in a compelling and meaningful way (HSE, 2008)

3.4.2.2 Communicate the vision and business case for change:

Gaining understanding and commitment to a new initiative is not an easy task, unless those concerned and involved with the change process have been consulted and involved in the process, there is little incentive for them to buy into the new vision (Senior & Swailes, 2010). Teams and work groups are fundamental units of an organisation and also a key leverage point for improving the functioning of organisations (Senior & Swailes, 2010). The first education session were purely about creating and communicating a vision to help direct the change effort (Kotter, 1996).

The results from the four meeting model and data collected in regards to inappropriate referrals/ waiting times, cost and documentation audits were again presented to the group. The process map and root cause that was used in the preparation stage was reinforced to identify the service gaps. The current standards of practice were identified and the desired future care pathway was communicated.

In total fourteen staff attended the session, which included three participants from the community. The power point presentation (Appendix 14) included clinical information about the foot pathologies, their relation to falls and how, as health care professionals, we could act to prevent the risk of falls (SPFFI, 2008). At the beginning and end of the session a questionnaire was given to the participation to assess the knowledge developed and every one was clear that a change initiative was underway (HSE, 2008).

The session provided valuable feedback to the author, which helped to shape the next two education sessions. It was also an opportunity for the staff to express their views, ideas and solutions within the change process. Overall, this session received positive feedback from the staff. To assess the probability of the success of the change process, the author used the DICE framework by Sirkin *et al*. (2005), which focuses on duration, integrity, commitment and effort (DICE) and this analysis, was explored in collaboration with the staff. The DICE score for this initiative was calculated to be nine (Appendix 15). According to Sirkin *et al*. (2005), any project score between seven and fourteen is likely to succeed. This further assisted the author to build and sustain a positive flow.

3.4.2.3 Developing the implementation plan:

From the four meeting model and the education session a clear future state was identified and designed, this encompassed changes in structure, processes, culture, people and working relationships (HSE, 2008). At the same time these changes were communicated clearly in the education sessions with much clarity. The ability and the readiness to carry out these changes were addressed (NLIAH, 2005). A detailed ICP was prepared regarding the new practices that were identified for implementation, which performance measures would be put in place and the personnel responsible for measuring variances and ensuring standardisation.

3.4.3 Implementation:

This stage matched well with the pilot and implementation stage of ICP development tool (NLIAH, 2005). It involved implementing the new changes in line with the structure and process of the care pathway and ending the traditional practices of doing things. Every transition starts with an ending (NLIAH, 2005) and this new beginning was made easy for the author due to well planned and executed previous phases, although there was still some resistance experienced on occasion. The desired ICP was implemented by the agreed date on a three month pilot basis, however there was a delay in the printing of the information leaflet due to further reviews and proofreading by physiotherapy managers. The author felt that this was due to different schools of thought by the two proofreaders and also due to the fact that both the managers had other service developmental priorities.

The resistance mentioned above was caused by difficulty with completing the new referral forms and the author received the feedback from one particular ward that this activity caused duplication and was still time consuming. Resistance to change can come at any stage of the change process and it can be positive or negative (Waddell & Sohal, 1998). The author made some changes to the referral forms and using negotiating skills gained support from the administration staff who agreed to make patient label stickers, holding personal information which saved nurses time in form filling. This also supports the contention that ICP is about involving clinical and non-clinical persons in the care process (NCPDNM, 2006).

The implementation of ICP started to become embedded in all the units, however, there were still some enquiries from the wards about the process of referring patients to the clinic. The author and the physiotherapy colleagues provided support to the referral source by going thorough the referral criteria over and over until they were clear about the new system. The phone calls and queries were mostly from the new agency staff and not from permanent staff who had attended the education session. Gradually by the end of the first month of implementation of the ICP everyone was familiar with the new system and small changes started to reflect in the structure and the process that was evident from the reduced number of inappropriate referrals received. In the meantime, the information leaflets were signed off and ready for use (Appendix 16) and a mobile phone application (Appendix 17) was designed to make these leaflets available in any android mobile phone for ease and timely access by care giver or family members.

At the end of the first month of implementing ICP there was significant feedback from the staff and the families of patients. They were able to visualise the difference that the new care pathway had made, especially the foot clinic appointment waiting times which had been drastically reduced. This was considered a short term win for the author although the data for evaluation were still being collected at this stage to assess the quantitative measurement of the project. The author was slightly ambiguous about effects of change process initially and this short term win indicated that the project was on the right track.

Short term wins can increase the potential for good and bad results (Kotter, 1996) and one should not be carried away by the short term wins but resolve to keep the

momentum building. The author was constantly monitoring and provided necessary support to all involved in the new process. The author also encouraged peer learning within the physiotherapy department and special interest group on foot conditions was formed.

3.4.4 Mainstreaming:

The last stage of ICP development is to focus attention on the successfully implemented care pathway. This coincides with the mainstreaming phase of the HSE change model. It involves two steps, embedding the change, and to evaluate and learn.

3.4.4.1 Embedding change:

For the purpose of continuous quality development regular monitoring is required for embedding and sustaining change. The ICP development team was still continuing to meet constantly to monitor the effectiveness of the care pathway implemented and provided ongoing support. Using the ICP variance tracking check list, continuous evaluation will be undertaken by the ICP team to ensure that new practices are embedded. Culture plays an important role in this stage as it tends to teach the newly implemented practices to the staff as the way that we do our business (Kotter, 1996). The author continuously encouraged the staff and patients to use the information leaflets and also gave a copy of referral criteria, a copy of the ICP map to the ward managers to make it an integral part of their daily practice and as advised to train the new nursing staff and the agency staff on the ICP as part of their

induction programme. The author believes that empowering staff with continuous support structures in place will enable the change process to sustain (Bowers, 2011).

3.4.4.2 Evaluating and Learning

The main aim of evaluation is to identify the effectiveness of the current change process and if any changes are required, to continuously improve the quality of care and to identify learning points that will be helpful for future change projects. The author also has used the continuous quality improvement framework Plan- Do-Study-Act cycle (PDSA) in the mainstreaming phase to constantly review the change process using the variance analysis checklist.

Figure 4: PDSA Cycle:

3.5 Summary:

The development and implementation of a new care pathway for the foot clinic services were achieved using the HSE change model. This included the development of evidence based protocols and guidelines to achieve standardisation

of the care process. This chapter has set out the improvements made in the author's workplace, which is about standardisation of the care process by reducing variance in practices. Although the HSE change model involves detailed analysis and implementation strategies, which could be more comprehensive, it still covers all the aspects of the change management and gives good support to the leaders carrying out the change. In the next chapter, the author will address the evaluation of the project and will identify the outcomes of the project.

Chapter 4: Evaluation:

4.1 Introduction:

Evaluation is a method of measuring the extent to which an intervention achieves its stated objectives (Evens & Lindsay, 1999). It is a structured process to identify or determine the value, importance, worth, effectiveness or impact of a change programme or effects of newly implemented policies, guidelines or any kind of intervention in an organization (Belling, 2013). It helps in identifying the elements that need to be changed or further improved (HSE, 2008). Evaluation is one of the steps of the HSE change model where evaluation happens as part of the ongoing change process, which enables for continuous improvement and learning.

This kind of action evaluation is called the formative evaluation and once the change is implemented a total evaluation takes place, which is a summative evaluation. Evaluation studies may be formative or summative and should focus on possible trends and performance patterns (Wood & Haber, 1990). This chapter will address

the evaluation of the change project in relation to the process and outcome by analysing the five objectives set out in chapter one of the change programme. It also weighs the project in relation to the overall outcomes mentioned in the project impact statement.

4.2 Evaluation methods and tools:

Various tools and methods are available for evaluation. The tool being used depends on the scope of evaluation and variables to be measured (Argyrous, 2007) and the methods being used depend upon the research question (Broom & Willis, 2007). In terms of measuring variance in a care pathway that is implemented, one must follow a consistent style to record, analyse and report variance to avoid any misperception (De Luc, 2001b). A variance is regarded as any deviation from the proposed standard of care listed in the pathway (Atwal & Caldwell, 2002).

In healthcare a clear question needs to be established: 'What you are looking for?' and 'How will it improve the patient's care and what you are planning to measure?' This will help to determine the research methods (Lohan & Carmel, 2013). The most widely used approaches are qualitative and quantitative methods. Some researchers like to use a combination of two or more methods, which is called triangulation (Begley, 1996). Both qualitative and quantitative research is essential in health care and each play very different roles.

4.2.1 Qualitative Methods:

Qualitative research is research from social enquiry; it is often opinion based and quite subjective. Qualitative analysis tends to focus on behaviours, feelings and experiences. It is often used in the exploration of conflict to change (Holloway & Wheeler, 2010). It is highly important in healthcare as it promotes a holistic approach and supports the biopyschosocial model, which helps health care staff be more understanding, caring and improves communication. It is also successful in the management of variance and compliance to programs. The sample sizes are usually small and data collection is through conducting unstructured interviews and focus groups. People who are being interviewed in the focus group will have similar roles and experience (Green, 2007; Holloway & Wheeler, 2010).

However there are some shortfalls as it is not objective and therefore can be affected by bias (Holloway & Wheeler, 2010). It is mainly based on opinion, so will not have a strong statistical standing when compared to experimental evidence. It is more concerned with understanding and therefore may not be suitable if specific data is needed to show results. The author in this project has used a quantitative approach due to the nature of what is being measured. The author is trying to measure variance in the process such as the number of inappropriate referrals, cost, waiting times, documentation errors, etc. These types of criteria require statistical data, rather than descriptive reports. In addition, staff knowledge following training is also measured using the questionnaires based upon Kirkpatrick model.

4.2.2 Quantitative Methods:

Quantitative method is experimental and is a systematic empirical form of research. It is objective and therefore does not allow for bias. Adherence to protocols is a key aspect to ensure validity. It is the best form of collection and analysis of data and therefore can measure the effectiveness of change (Rolf, 2013). It also is reliable due to randomization and systematic reviews. Data collection can be retrospective, where data is already recorded and requires data retrieval or it can be prospective where data is not yet collected and requires collection, using tools such as questionnaires. Quantitative data collection is usually through questionnaires, observations and also data extraction from existing databases, medical records or administration data (Naughton, 2013). The author in this project has used both prospective and retrospective methods such as questionnaires and chart reviews. Chart reviews are a form of data collection from existing medical records. Questionnaires were designed to evaluate a training programme based upon the Kirkpatrick model.

4.3 Knowledge evaluation:

Conducting a training evaluation is not an easy task (Abernathy, 1999). This evaluation requires a valuable and reliable tool to measure the outcomes of a training programme. Kirkpatrick & Kirkpatrick (2006) suggests that there are various reasons for evaluating a training programme and the rationale for evaluation should be identified first. There are many models available for evaluating the training programme such as Jacob's model which functions by engaging the stakeholder's in

a productive way throughout the evaluation process (McNamara *et al*., 2010). The author has chosen the Kirkpatrick model, which acts as a fundamental theory for evaluating training programmes (Bates, 2004).Smidt and Balandin *et al*. (2009) argues that this model not only measures the impact of education on staff but also identifies where the hindrances are, therefore identifying any improvements in knowledge, cost and application. However Bates (2004) challenges the ethics of the Kirkpatrick model, as it is unable to answer both summative and formative questions. Bates (2004) would also argue that the potential benefits don't outweigh the risks and put the evaluators at risk of ethics. Albernathy (1999) in contrast feels staff education should be tested but instead of using a fixed model the evaluator needs to analyse what they are measuring and who it is affecting and pick a suitable method of testing to compliment their variables. Overall it is clear that there are no fixed thoughts on which model is the best to use in health care in particular. All organisations are different and therefore should be assessed individually to decide which model will best suit their project, staff members and patients. Kirkpatrick model delineates four stages of training outcomes: reaction, learning, behavior and results. The author, while designing the questionnaire had clear criterion on what needs to be measured.

The questionnaire was aimed at measuring the reaction and the learning aspect of the training. The author used the likert style questionnaire for evaluating the reaction level (Appendix 18) and closed questions for assessing the learning level, which includes pre and post training evaluation (Appendix 19). In total fourteen people attended the training programme. The first questionnaire used was to measure the reaction. Although this questionnaire does not measure any learning outcomes, it

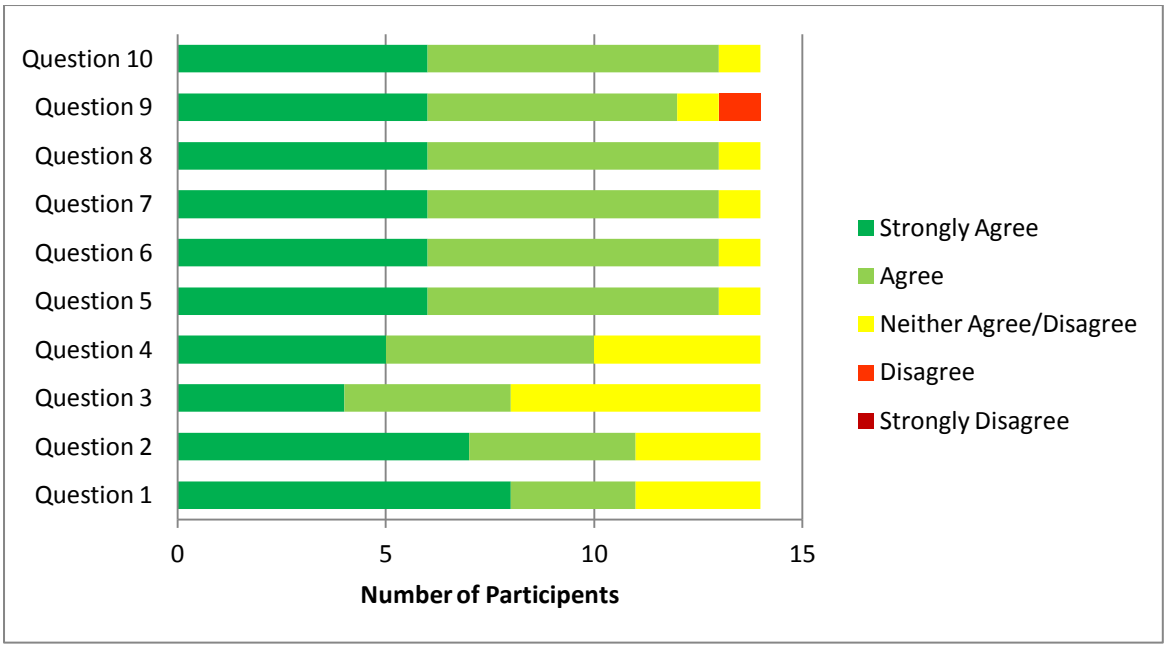
gave good feedback to the author on the participant's perception, motivations, interests and attention levels and on how they liked the training process overall (Smidt *et al*., 2009). This stage is easy to measure and according to Kirkpatrick (1996) every education programme should be at least evaluated at this stage.

4.3.1 Reaction Evaluation:

This is the first level of evaluation. The overall training experience for the staff was rated positive. Evaluation (Figure 5) also showed that this training programme is highly recommended to other members of the team. The instructor's (author) knowledge on the subject was also well rated. Although the second criterion, which is about knowledge gained, was also rated highly, it is very subjective. It requires pre and post evaluation questionnaires to measure the learning outcomes.

Figure 5:

Reaction Graph

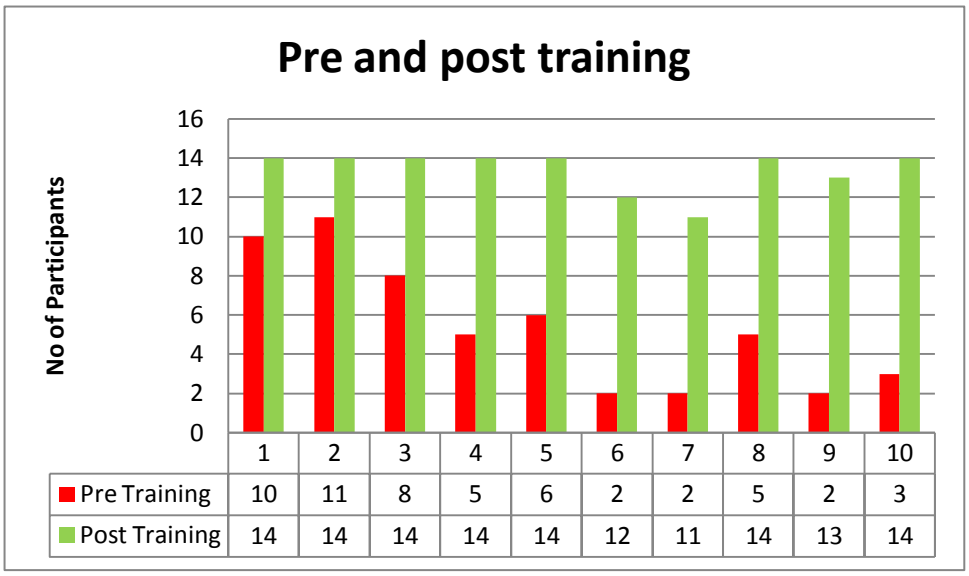


4.3.2 Learning Evaluation:

The second level is learning evaluation. Level two assessments provided a clear picture of the learning outcomes. However, individual learning does not always necessarily transfer to organizational learning (Coghlan & McAuliffe, 2003). Pre and post training evaluation was conducted during the education programme. This also acted as a survey for identifying training needs. While setting up the objectives for the questionnaires, the author took into considerations a few important aspects such as what results are expected to be established and what knowledge, skills, and attitudes are necessary to achieve the desired results (Kirkpatrick & Kirkpatrick, 2006).

The training programme and the evaluation questionnaires were based on these objectives. A closed questionnaire model, which had ten items in the questionnaire, was used. The participants have to tick 'true' or 'false'. The Majority of the staff who attended the session showed a significant improvement in post-assessment scores, which reflects their knowledge and skills gained from the training session. The key aim of an organizational development intervention is to stimulate organizational learning (Coghlan & McAuliffe, 2003). The results are shown in figure 6, thus achieving one of the SMART objectives.

Figure 6: Pre and post training evaluation



4.3.3 Behavior and results evaluation:

The third level is to analyse any behavioral changes as a result of the training programme and the fourth level of evaluation is about measuring overall results and the outcome of the training. This level is about bridging the gap and translating knowledge and skills gained from the training session into practice (Smidt *et al*., 2009). This assessment was done immediately after the training session in December 2013 and it was noticed that the improvements of the key performance indicators such as referral errors had improved significantly. The variance in the care pathway has reduced. It is clear from figure 7 & figure 8 below that the number of inappropriate referrals received in January, Feb and March 2014 had significantly reduced compared to last year's data. The written referral number has also significantly improved.

Figure: 7 Pre ICP implementation results – Referral

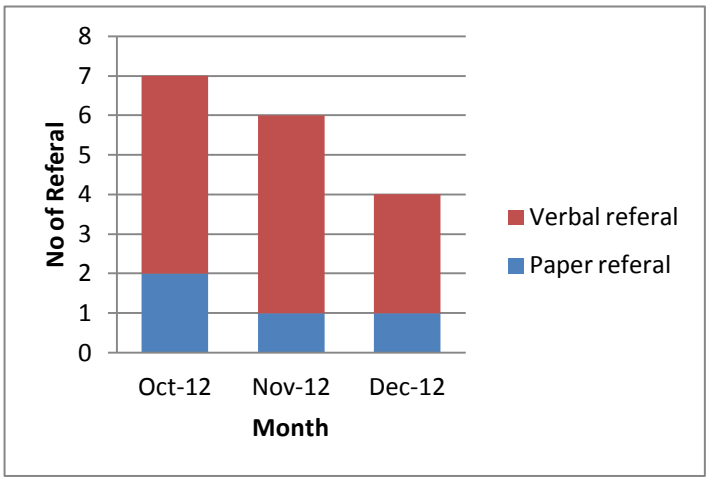
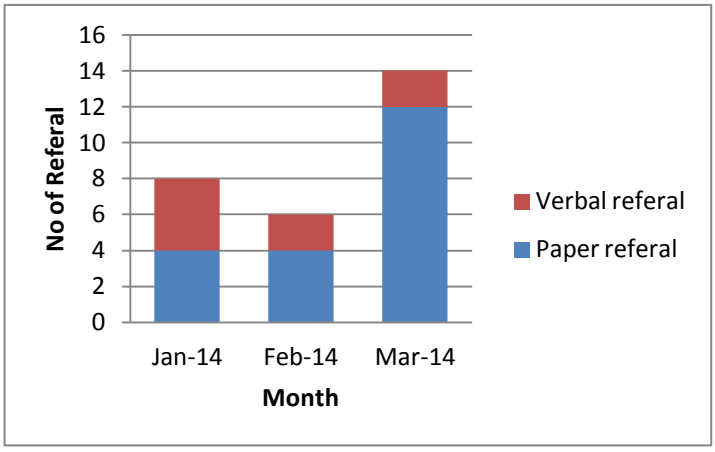


Figure: 8 Post ICP implementation results – Referral



The average number of patients that were referred to the foot clinic before ICP implementation was six to seven patients per month. It is evident from figure 8 that the number of referrals in March 2014 has increased significantly, bringing the average numbers to nine patients per month in 2014. Due to physiotherapy staff shortage, referrals to the foot clinic were not taken for the first two weeks in February 2014 and only six referrals were taken for the month of February. This resulted in a

sudden surge in referrals for March. In addition to this, one patient was seen twice in the same month as a repeat referral was placed by the nursing staff due to concerns from the family. Although reductions in inappropriate referrals were noted, there were still some variations noted in the referral process. Change will not happen immediately and it is a slow process (Wilson, 2001).

4.4 Reduction in waiting times:

The improvements to the referral systems are reflected in the appointment waiting times for foot clinic appointments. The author receives the referrals in writing and in a timely manner, which allows priority of cases. It is evident from the figure 9 and figures 10 graph below that the entire patients were seen within 1-2 weeks from the date of referral. Previously, the waiting time for the same service was 4 weeks in average.

Figure 9: Pre implementation waiting time

Pre Implementation of ICP: Patients seen in an average of 4 weeks time

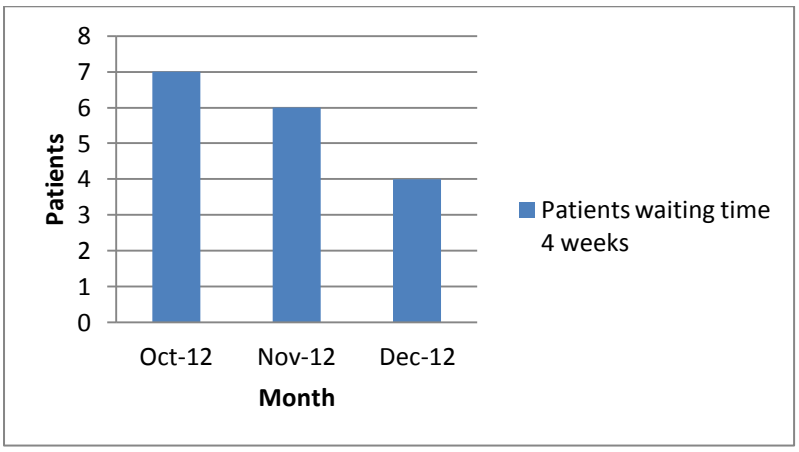
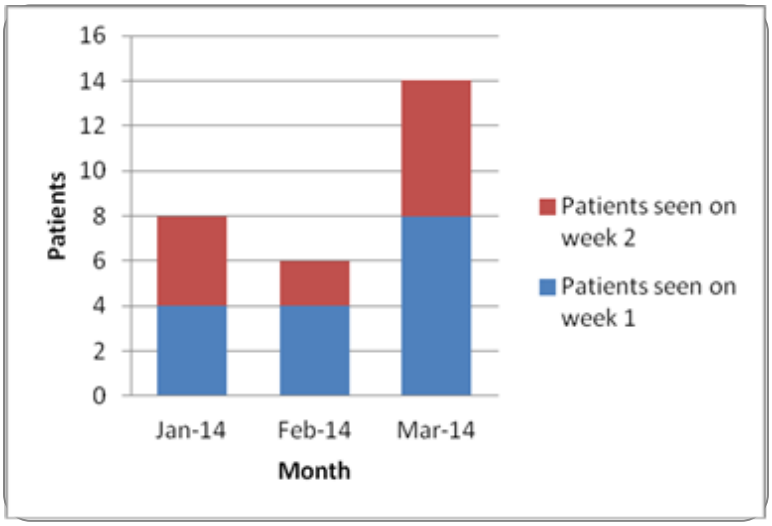


Figure 10: Post implementation waiting time

Post Implementation of ICP: Patients seen in 2 weeks



4.5 Chart Reviews:

Chart reviews are one of the quantitative techniques of data collection and considered as one of the methods of organizational patient safety data gathering systems (Weinger *et al*., 2003). Many scholars consider retrospective chart reviews "*quick and dirty*" because the data are quickly gathered from existing records to answer a question. These existing medical records are the primary data source. In this project It is the physiotherapy records that are reviewed as the primary data source.

One of the SMART objectives of this project was to improve documentation standards by implementing best practice guidelines around general documentation and specifically to the foot clinic. This method was chosen to evaluate the documentation aspect of the project due to its reliability, as patient's records were expected to provide reliable evidence of clinical care. However, according to Dean (2004) this design should be discouraged when a prospective study is feasible.

The principal purpose of record keeping is to ensure that quality of care is being provided for the patient. Regular audits are essential to ensure that high standards are maintained (Dimond 2009). In order to improve documentation standards, a documentation audit was necessary. The vast majority of the audit involves quantitative methodology (Naughton, 2013). The focus of the audit in this project is to assess and quantify documentation performance against predefined goals set by the ISCP.

The ISCP (2009) core audit standards were adapted and used to compare current standards in documentation among physiotherapists. This audit tool (Appendix 20) was developed by a community physiotherapist and was modified by the author according to the needs of the service. This documentation audit was also driven due to local initiative by the community physiotherapist. In total two physiotherapist's notes were audited and ten charts were randomly picked, which included a mixture of foot clinic charts and the patient's general physiotherapy charts. Questions on the audit form were scored as either 'pass' or 'fail'. Physiotherapists who did not meet the eighty percent pass rate on more than two occasions on two separate audits would have a meeting with the physiotherapy manager for individual performance review and for training positive reinforcement.

Table 1: Statistics for documentation audit:

Total Percentage: Number of Items Passed = _____ x 100 = _____ %
Accuracy Total No of Items Audited

Pass Mark is 80% Accuracy.
Tick the box below according to your score:
Over 80% ☐ Pass
Under 80% ☐ Fail

Table 2: Pre & Post ICP implementaion audit dates

Audit Date – Pre & Audit Date - Post	**October 2012 & January 2014**	**Nov 2012 & February 2014**	**Dec 2012 & March 2014**
Number of Physiotherapist's charts audited	2	2	2
Total number of charts audited	10	10	10

From the Figure11 below the comparison of pre and post implementation of documentation standards results are shown

Figure 11: Pre audit results

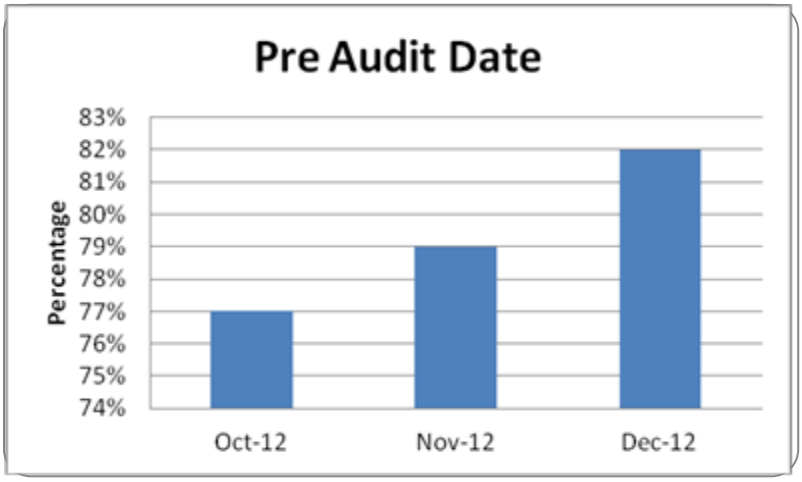
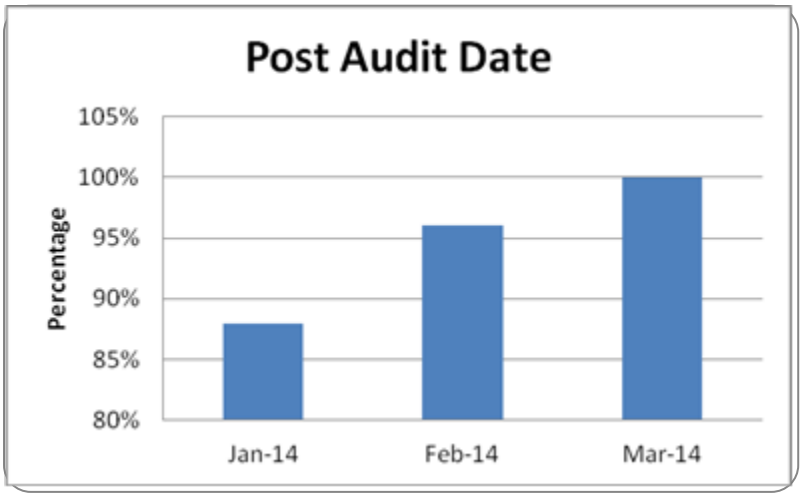


Figure 12: Post audit results



In summary, it is apparent that by conducting a clinical audit, physiotherapists can help bring about changes in clinical care, which have direct benefits for patients (Tobin & Judd, 1998). It also faciliates communication between professionals while maintaining a record of diagnosis, treatment and future plans for the patient. Records should also include the outcome of treatment, together with details of what the patient stated, the fact that consent was given to treatment and that information was given to the patient about the risks of the recommended treatment (Dimond, 2009).

4.6 Economic evaluation:

Cost containment was another objective of this project. Cost is another aspect, which must be evaluated. Cost in health care is becoming a bigger concern, especially in regards to current financial constraints in our health services (HSE, 2014). There are many ways of analysing cost. Ubel (2001) states that cost effective analyses are a way of comparing the benefits of patients to cost. It also has a powerful ability to influence change and healthcare rationing to a particular sector.

The main aim of this initiative was to reduce the number of footwear referrals to the private contractor, thereby reducing the cost of procurement of footwear through that particular contractor. Before the implementation of the ICP in the author's work place, the practice was to permit the private contractor to order the footwear from his or her own company. After the implementation of the ICP, that responsibility has shifted to the physiotherapist to identify cheaper quotes and decide what shoes the patient requires. Physiotherapists in the author's workplace are trained to carry out this particular assessment.

Auditing is not only a process of critically and systematically assessing professional practice to improve performance but also to ultimately improve the quality and cost effectiveness of patient care (Noghton, 2013). An audit on the foot clinic cost was done for year 2012 and it was noted that the cost of standard medical shoes that are bought from the HSE private contractor is 290.00 Euros, which includes professional fees of 65.00 Euros. The new practice involves ordering similar shoes from a range of other companies that provide shoes at a lower cost. The cost of each pair of shoes is 130.00 Euros if purchased from outside companies and no professional fees are involved, as the assessment and fitting are undertaking by the physiotherapist. Since this shoe price is affordable by most of the patients and their families, it provides further cost savings to the HSE. In cases where the patient is unable to pay the 130.00 Euros, a special case is made to the HSE to procure funding. Table 3 shows the number of patients who required shoes.

Table 3: Number of referrals received

Month	No of referrals to foot clinic	No: of patients required customized shoes	No: of patients required medical shoes	Number of patient who paid themselves	Number of patient for whom HSE paid
Jan 2014	8	0	6	5	1
Feb 2014	6	0	4	4	
March 2014	14 (13+1)	2	9	9	

Table 4: Cost Savings analysis

Month	No of patients required medical shoes	Estimated Pre implementation cost (290 Euros)	Post Implementation cost (130 Euros)	Savings	HSE Payment for shoes
Jan 2014	6	290 X 6	130 X 6	960.00	130.00
Feb 2014	4	290 X 4	130 X 4	640.00	
Mar 2014	9	290 X 9	130 X 9	1440.00	
Total Cost in Euros		**5510.00**	**2470.00**	**3040.00**	**130.00**

Before the implementation of the ICP, the projected budget purchase of footwear to HSE was estimated at 5,510.00 Euros. If the HSE were to pay for the footwear the total amount of saving for the HSE due to implementation of the ICP would be 3,040.00 Euros (5,510 – 2,470 = 3040.00 Euros). The average cost of medical shoes has been reduced from 290.00 Euros to 130.00 Euros, as a result of the implementation of the ICP. One may argue that the cost of physiotherapist's time involved in taking the new role of footwear assessment may be expenditure, rather than a savings of physiotherapist time. But the introduction of the current Haddington Road agreement has facilitated this practice due to increased clinical working hours.

4.7 Summary:

It is clear from this chapter that the implementation of the new ICP has significantly reduced the appointment waiting times and reduced inappropriate referrals in the first three months of the pilot project. It has also improved savings to HSE and physiotherapy documentation standards have also improved noticeably. The author in the next chapter will further discuss in detail these findings and make future recommendations.

Chapter 5: Discussion & Conclusion:

5.1 Introduction:

This chapter will identify the strengths and limitations of the change project and the organisational impact of the change process. The author will conclude by summarising reflections on the project from the perspective of his personal learning from the process as a change leader.

Success of the change process exists when a newly implemented change or a quality improvement process endures and progresses over time and develops into 'the way things are done around here,' without returning to the traditional practices that existed before the improvement project. This is called sustainability. Sustainability is the ability of a change project to continuously react to issues, at the same time maintaining focus on the original goals (Mancini & Marek, 2004).

One of the difficult elements of the change process is to sustain the improvements and new practices that have been gained from the change process. To sustain these changes, it requires a quality improvement culture to be embedded into the organisation that is undergoing change (Davis *et al*., 2014). Especially while implementing ICPs, there is potential for an enormous waste of time if ICPs are not sustainable in practice and thereby will influence standardisation of the care process (Jackson *et al*., 2002). This change project has used both the summative and formative evaluation designs for sustaining the change.

A leader should be clear of what he or she is trying to sustain and how long it should be sustained, as today's sustained change can be tomorrow's resistance (NHS, 2005a). The main findings from this change project are the implementation of an ICP establishing better inter-collaboration teamwork and commitment (Deneckere *et al*., 2013; Jackson *et al*., 2002).

The main impact of this project on the organisation is to improve quality of care by standardising the care and improving cost effectiveness by using the principles of lean management. Lean management is not only about reducing waste and saving costs but also about identifying the knowledge, skills, education and creativity that employees possess and making use of it to reduce waste (Manos *et al*., 2006).

The author in this change process identified that physiotherapists are skilled enough to provide a triage service and implementing the practice of a triage service reduces the foot clinic appointment waiting times and also reduces the cost of professional fees to the private contractor. It is evident from the literature that falls occur when

older people are relocated into a new environment and falls usually takes place within the first week or on the first day of admission into a nursing home (Todd & Skelton, 2004). This project has changed the screening criteria for falls and footwear assessment waiting time, especially, which has been significantly reduced. Patients are triaged within one to two weeks of the referral process, preventing secondary complications and footwear related falls.

5.2 Strengths of the project:

The change project chosen was relevant and needful, it possessed strong compelling drivers, and particularly the external drivers and the internal drivers for change laid a very strong foundation for change. The FFA and the organisational readiness assessment for change were also in favor of the change process, it recognised the genuine need for the change.

The author had very strong back up from high interest and high power stakeholders. They could visualise the benefits of the project for the organisation and for the patients. The total project cost was 320.00 Euros, which was funded by the nursing home for the purchase of a footwear size dispenser. The expertise of the leader in the area of foot and falls was an added advantage to the project and the ability of the author to use different leadership styles (Gillam & Siriwardena, 2013) and the negotiation skills used to form an alliance with the MDT members was also seen as a positive influence on this project.

The use of the HSE change model in this change process played a vital role and guided the leader to implement and mainstream the change process in a systemic fashion (HSE, 2008). The availability of the literature on how to build an ICP was also supportive (NCPDNM, 2006; NLIAH, 2005; De Luc *et al*., 2001b)

The introduction of the Haddington Road Agreement, providing for extended working hours for the clinicians was taken as a constructive factor by the author, as it enabled the provision of the foot clinic triage service due to the availability of the resource of time.

5.3 Limitations and Challenges:

However, there are a few limitations to this change process. The use of a small sample size and further use of only quantitative data for data collection and evaluation was a limitation to the study. Data collection and feedback are an integral part of organisation development processes and it is recommended that data from multiple perspectives using a variety of methods should be used to obtain an integrated picture of the impact of a change process (Coghlan & McAuliffe, 2003).

Although, this project's aim was not to measure the footwear related falls in the author's organisation, including this factor into the study would have added weight to the project. However, secondary to lack of data on footwear related falls, it was difficult for the author to measure and analyse this aspect. Lack of proper definition for an ICP (O'Connor, 2013; De Luc, 2001a) and a dearth of literature on foot care services in Ireland, lack of national foot care standards or guidelines or protocols on

foot care pathways may be considered as a limitation in building an ICP for general foot care. According to (QPS, 2013), clinical governance can only be achieved through implementing evidence based standards, protocols and guidelines.

In Ireland, health organisations follow their own local policies and procedures in relation to foot care services. The foot care pathway built by the author and the physiotherapist team was based on best available international evidence but this may not be targeting the needs in terms of the Irish healthcare system. For building an ICP (NCPDNM, 2006) and also for the successful implementation and sustainability of the change process it is recommended that the MDT, patients and carers should be directly involved in the change development process (NHS, 2005a). Due to the fact that most of the patients that the author deals with are cognitive disabled, it would be challenging for ethics approval to involve them in decision making.

This project was implemented across all the units at the same time. It could have been implemented in one unit as a pilot but the issue of sample size for evaluation would be a limitation. If implemented in one unit the maximum number of referrals received would be approximately two or three patients, so the author did not have a choice other than to implement all units simultaneously, so a sufficient sample size would be available for an evaluation of the effectiveness of this change project. However the author has piloted this project for three months and will be constantly reviewing it using the PDSA cycle and the variance tracking checklist for continuous quality improvement. The other main factor that was limiting in this project was the time factor. The process was enormously time-consuming and took up many hours

of senior physiotherapist time. The involvement of many disciplines made the ICP development process complex, especially when organizing for the meetings. Many initiatives were taking place in the author's workplace and it was challenging for the author to focus on the change project and organise the MDT training sessions as the MDT were busy in their own quality improvement projects.

5.4 Recommendations:

The change implemented above in the author's foot clinic service has achieved all the aims of the project and the results have shown significant improvements in terms of patient waiting times, cost and standardisation of care. This pathway developed can be used in similar kinds of nursing home setups. The information leaflet developed was based on current evidence based literature reviews and can be shared in similar areas, these leaflets will particularly benefit elderly people living in the community.

Any quality improvement projects cannot work on their own, it have to be institutionalised (Davis, 2014). It is worth linking with the local falls steering committee group to associate footwear assessment into routine falls checklist as to date this footwear related falls factor has been ignored. Including in the falls checklist the kind of footwear that the patient was wearing at the time of the fall and recording the number of footwear related falls is recommended (SPFFI, 2008; Menant *et al*., 2008). Understanding patients' experiences of their interactions with health services is an important step in building quality from within (Smith & Ross, 2007), so it is also

recommended that patients and carer's are involved in every quality improvement project.

Footwear assessment may not be a high priority for the nursing staff and managers. It is evident from the above change process that the lack of knowledge on footwear and foot conditions was one of the reasons for inappropriate referrals. Education on those topics has improved greater understanding for the nurses on common foot conditions in elderly people, which in turn have reduced inappropriate referrals to the author's organisation. So education on footwear and foot conditions should be recommended as part of continuous professional development in healthcare organisations. Documentation of variance can be an extra burden for the ICP team. So it is recommended that ICP documentation should be made simple (Jackson *et al*., 2002)

The author's project is an action research project where two cycles operate at the same time. One cycle consists of diagnosing, planning, taking action and evaluating in relation to change project and the second cycle is about the action research cycle, which is assessing the action research project itself (Coghlan & Brannick, 2001). This action research project is a comprehensive learning process that can be recommended for future HSE change projects or in any organisation, where it involves self-reflection for the author while conducting the change process and at the same time continuously studying the change projects itself.

Dedicated time and support has to be provided for training, education and for change project innovations. It is also important to note the appropriate time of the support to

be provided to staff involved in the ICP process. According to Coghlan & Brannick (2001) this kind of support is vital during the transition state where the old practices are gone and new practices have not yet been fully realised (Coghlan & Brannick, 2001). There should be a team reward system in place to motivate staff for innovative projects, rather than an individual reward system where there is reduced creativity by restricting the sharing of new ideas (NHS, 2005b)

Finally, a strong strategic plan, appropriate change management theories, effective identification of stakeholders, creating openness in communication, promotion of cultural collaboration and continuous learning is required for successful change management (Burnes, 2000). The leader must be able to identify the change champions, as change champions are a key aspect of any organisational change process (Hendy & Barlow, 2011). Also, the leader must be able to identify organisational politics that are often overlooked as action research is a political endeavor (Coghlan & Brannick, 2001) and the organisations should develop the ability to constantly reinvent themselves (Burnes, 2000).

5.5 Summary:

Despite initial resistance to the change project, an effective change process has been developed and the initial implementation has been successful. It was the aim of the change project to implement an ICP into the foot clinic services in order to standardise care and reduce cost and variances in practice. Based on current literature, a new ICP has been implemented in the author's workplace and has already shown significant improvements, which is evident form the evaluation

chapter. The success of this project is due to team effort, commitment and use of appropriate methodologies and change theories. Sustainability of the new way of working will be monitored and evaluated over time and any extra supports identified to sustain the change will be implemented. Various change models were explored and literature reviews were carried out on the ICP. The author discussed the various themes that evolved, which included the standardisation of care using ICPs, effectiveness of ICP and barriers for implementing ICPs and it's relevance to the author's foot clinic services. In conclusion, quality improvement culture has to be encouraged; staff should be empowered, resourced & allocated dedicated time for quality initiatives.

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Appendices

Appendix 1:

Foot Clinic – Referral source

MDT

- Physiotherapist
- Doctor
- Occupational Therapist
- Ward Manager
- Dietitian
- HSE private Contractor

Reference Sources

- Nurses
- Ward Manager
- Doctors
- Patient (Self referral)
- Day care manager

FOOT CLINIC

Appendix 2: Websites

Government body & society:

http://www.hse.ie/eng/about/Who/qualityandpatientsafety/resourcesintelligence/Quality_and_Patient_Safety_Documents/QPS_Roles_and_Responsibilities_April_2013.pdf
(Quality and safety)

http://www.hse.ie/eng/

http://www.hiqa.ie/
(Better & Safe care)

www.iscp.ie

http://www.cebp.nl/?NODE=85

www.nhs.co.uk

Journals on Integrated care pathways:

http://www.ijic.org/index.php/ijic
(International Journal for Integrated care)

http://www.longwoods.com/content/19918

http://www.e-p-a.org/clinical---care-pathways/index.html
(European Pathway Association)

Foot Care Guidance:

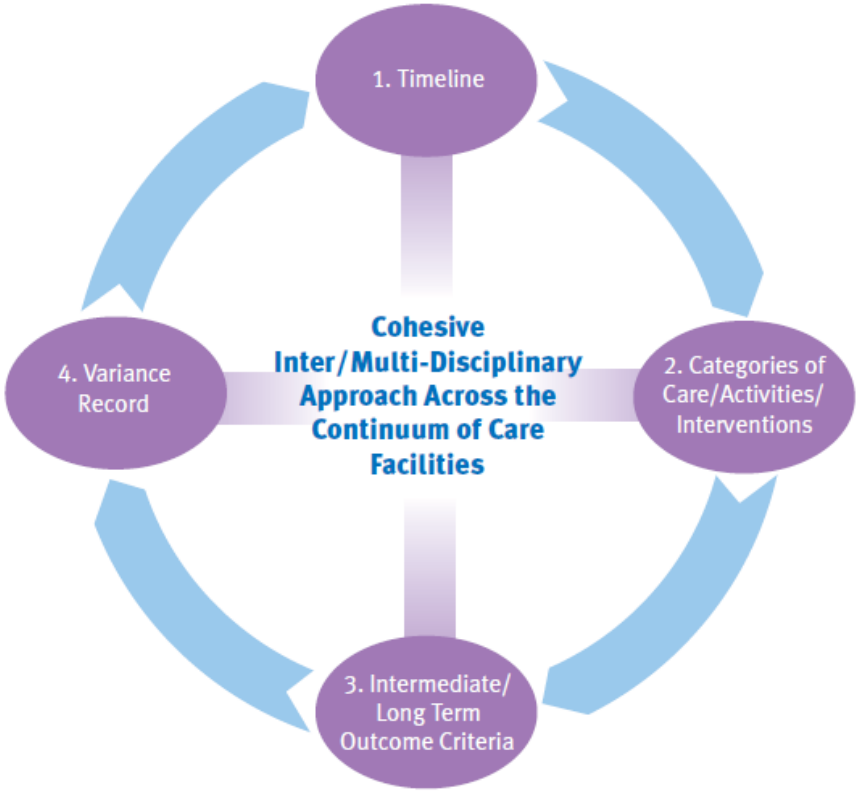
http://www.diabetesinscotland.org.uk/Groups.aspx?catId=C4

http://www.diabetes.ie/

http://iobi.swan.ac.uk/wp-content/uploads/2012/08/Older-Strategy-2008-Strategy-to-Prevent-Falls.pdf
(Falls in elderly)

http://www.scpod.org/easysiteweb/getresource.axd?assetid=26369&type=0&servicetype=1 **(Foot care Guidelines)**

Appendix 3: Four important components of ICP



(NCPDNM, 2006)

- **Time Line**:
  Implementation of ICP for three month period

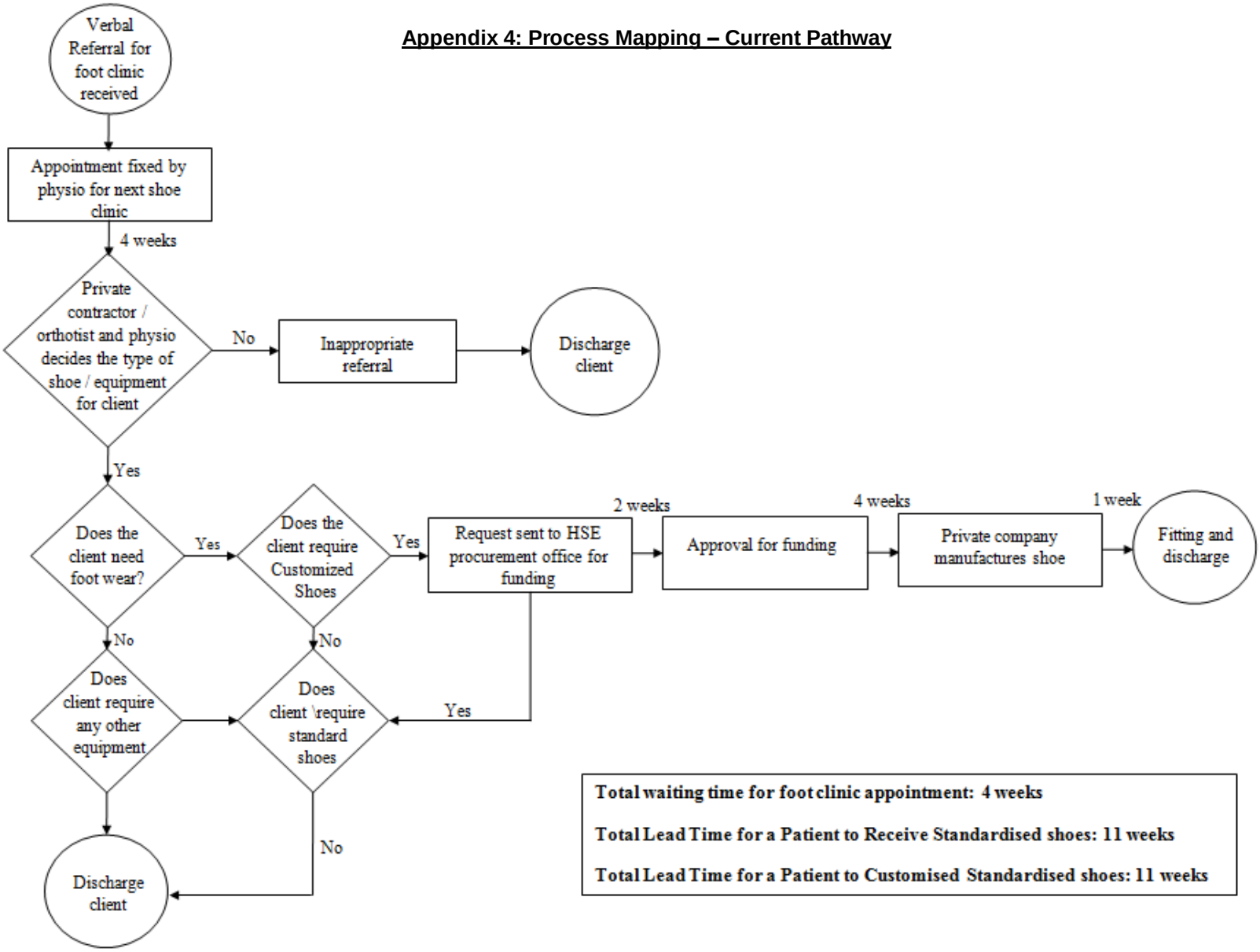
- **Categories of Care**:
  General feet care screening and treatment by nursing and physiotherapy staff.

- **Intermediate Outcome**:
  Management of current symptoms and prevention of future foot problems.

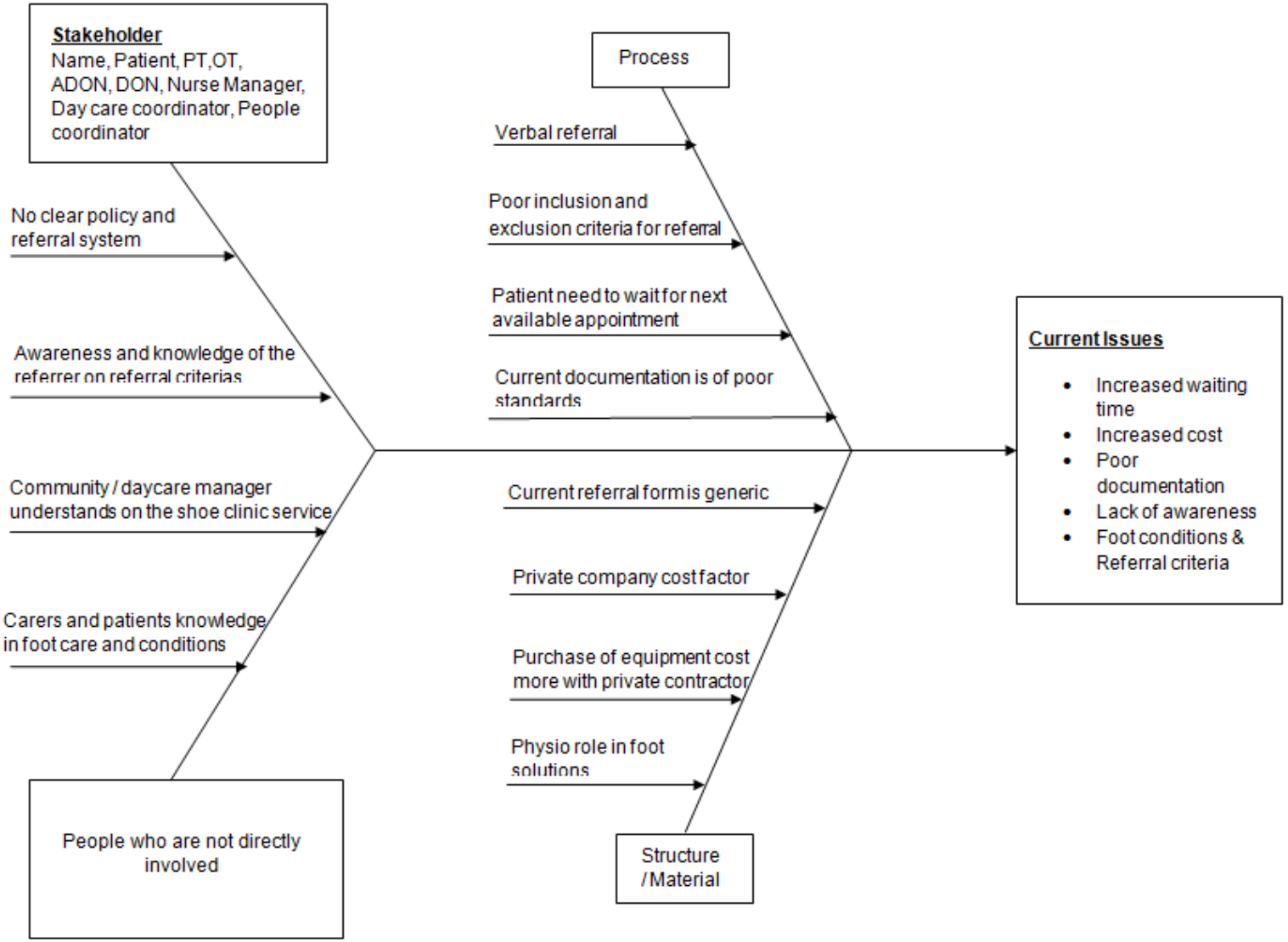
- **Long term Outcome:**
  Promote self care management.

- **Variance Record:**
  Monthly variance check for continuous quality improvement.

Appendix 4: Process Mapping – Current Pathway



Appendix 5: Root Cause Analysis



Appendix 6:

Power / Interest Grid - Stakeholder Analysis

High	High power high interest (satisfy) • HIQA • Physiotherapy Managers & Director of Care • HSE & Other Stationary bodies • Patients • Colleague Physiotherapists	High power low interest(Manage) • Other Physiotherapist in community • Assistant Director of Nursing and Practice coordinators • Allied health members • General Manager of the service • Nurse Managers
Low	Low power, high interested (monitor) • Health care assistants • Ambulance crew (Ambulance driver transport patient from community to foot clinic) • nursing staff	Low power, Low interest (inform) • General Public • Care givers and relatives of the patient • Volunteers • Fund raisers • Catering and maintenance staff
	Power	**Interest**

Appendix 7: SWOT Analysis:

SWOT Analysis - Introducing Care Pathway into Foot Clinic Services

Strengths:	**Weaknesses:**
➢ Skill-set of the author in the field of Physiotherapy in specified area (falls and foot care) ➢ Good support from Physiotherapy managers, colleagues and Director of care in carrying out this project ➢ Availability of guidelines on preventive of falls in elderly in Ireland, which indicates, that falls are preventable. ➢ Significant savings for the HSE in terms of finance and other resources ➢ Improved quality of care and meeting the legal standards ➢ Better communication between nursing home and community	➢ Gaps in capabilities in terms of knowledge and awareness of the referral source ➢ Lack of proper foot referral criteria ➢ Reduced staffing levels and lack of time and resources for training the staff members, nursing staff and community day care managers may not be able to attend education sessions and awareness programmes due to time constraints. ➢ Fear of change ➢ Difficulty with some patients with cognitive impairment ➢ Literacy level of family members and carers
Opportunities:	**Threats:**
➢ Recommencement of foot clinic services to Day care centre community centre ➢ Wider reach of information leaflets ➢ This care pathway can be used in other similar services ➢ Haddington Road agreement enables more time to spend with patients and more patients can be seen. ➢ Meeting the requirements of HSE medical and equipment committee	➢ Challenges form private contractors who are currently providing service in author's work place. ➢ High expectations from other units and departments to provide similar services within author's work place ➢ Increased work load for physiotherapists and nurses. ➢ Reduced staffing levels ➢ Organisational Culture.

Appendix 8: PESTLE: The PESTLE external analysis

Political factors:	There are no political factors driving towards or against the change project.
Economic factors:	HSE funding towards procurement has become very stringent. The moratorium and cutbacks continue with further loss of staff and resources. The current physiotherapy services are stretched and experiencing budgetary constraints. The deteriorating financial situation is forcing the families or patients to pay for themselves any footwear or foot products prescribed. Patients from lower socio economic background may suffer; these factors have some influence on the organisations but not on the author's change project, in fact it is a driver for the author's change project.
Social Factors:	Growing awareness on rights for service access by the public, growing health consciousness on falls in the elderly has put pressure on the physiotherapist to see the patient as soon as possible. The family carers and patient themselves would be seen by a physiotherapist as soon as possible. The waiting list for the community physiotherapist is mounting; the fragmentation of older people services in Ireland makes it hard to achieve an integrated and team-based approach to service delivery. Co-ordination may become challenging if change is not planned efficiently.
Technological factors:	Advancement in technology has been a driving force for change in all industries but in the author's work place still some units do not have access to computers. The author's communication with those units is by traditional methods such as typed letters, phone calls and personal conversations. The current referral system is still hand written and an electronic referral system will further save time and enhance a safe documentation system.
Legal factors:	There are no legal factors against the change project.
Environmental factors:	The trend of an ageing population is well established in Ireland. This will need to be consider by those who are involved in planning public services such as education and healthcare, especially designing integrated services for older people.

Appendix 9: Force Field Analysis (FFA)

FORCE-FIELD ANALYSIS (SCORE 0-10)

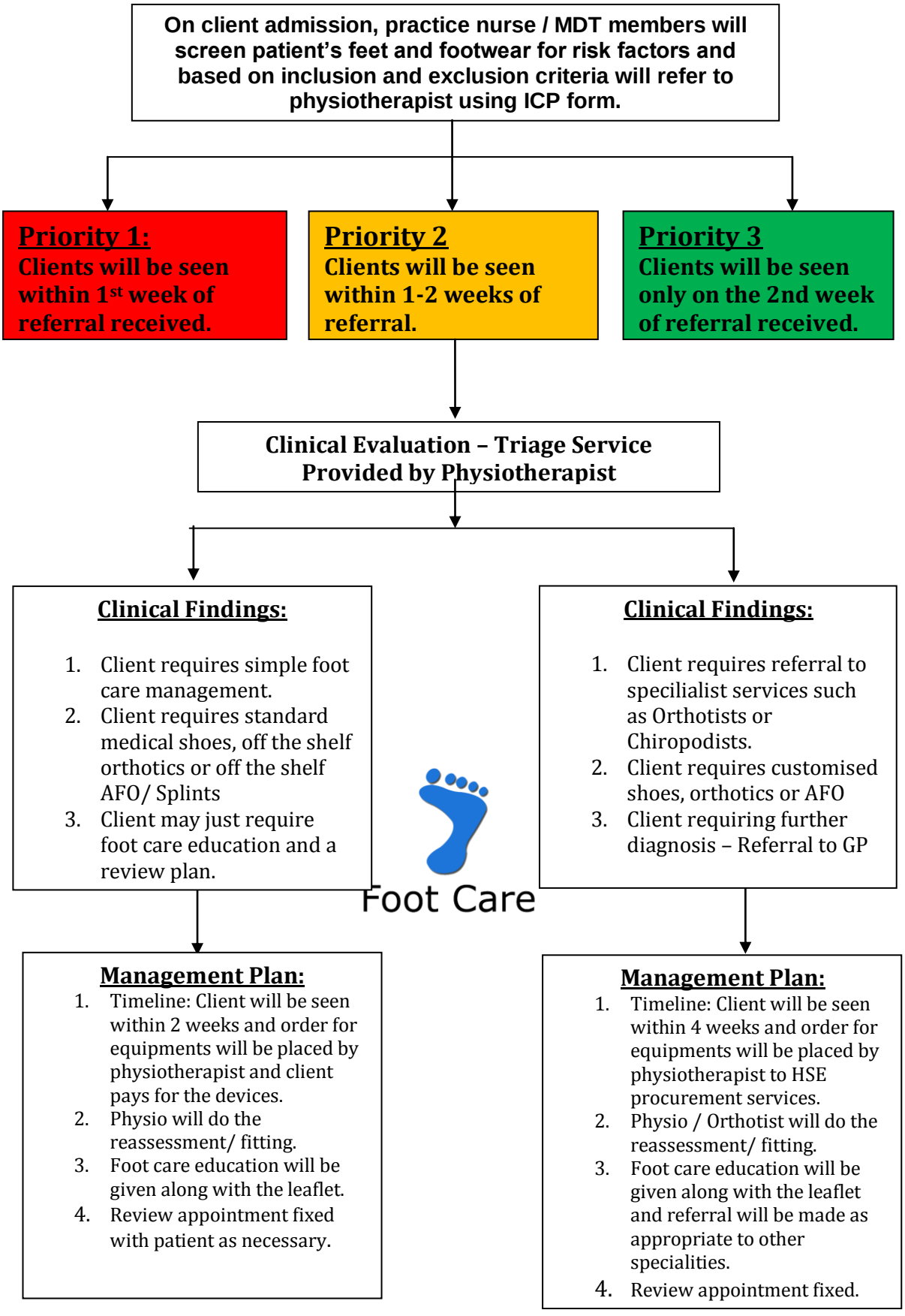
DRIVING FORCES (+)	*RESISTING FORCES (-)*
▪ HIQA requirements & Clinical Governance– Quality and Safety (Score:8) ▪ Increased waiting time for foot clinic appointments, right patient is not been seen on right time (Score: 8) ▪ HSE medical and equipment requirements (Score: 7) ▪ Cost cutting measure due to current financial climate in HSE (Score: 7) ▪ Lack of structured and informed foot clinic service in author's work place (Score: 7) ▪ ISCP: Current Physiotherapy standards & practices (Score: 6) ▪ Lack of awareness by members of staff on foot conditions and foot clinic services (Score: 6)	▪ Fear of change for staff: More responsibility, resistance to change, Increased work load, uncertainty, change in work conditions, comfort zone (Score: 8.5) ▪ Reduce staffing level and an extra burden for the physiotherapists, time constraints (Score:8) ▪ Current Financial climate and lack of funding (Score: 7.5) ▪ Challenges from HSE contractors (Score: 6)

Driving Force total Score: 49
Resisting Force total Score: 30

Appendix 10: Project Impact Statement

How things are now	How things should be when issues have been sorted
Behavioral: 1. Nurses and community day care managers are not aware of referral criteria to foot clinic services and have reduced knowledge of foot conditions. 2. Use of different way of referral system (verbal, emails) from different professionals.	**Behavioral:** 1. Nurses and community day care managers will be familiar and confident of referral criteria to foot clinic services and has will have good knowledge on common foot conditions. 2. Only written referral forms will be accepted from all professionals.
Personal: The author would always want to follow evidence-based practice but is currently unable to follow a structured pathway due to lack of proper systems in place.	**Personal:** The author will take individual responsibility to ensure proper referral systems and criteria are met and also will be involved in education and continuous support to the staff members.
Structure: Currently a private company is involved in the foot clinic, which provides the equipment for the patients. Not all patients need customized footwear and orthotics. The private company sees all patients, even uncomplicated patients which is unnecessary. A private company decides the treatment options. HSE: Procurement, decides the contractors to buy equipment from. Currently the responsibility for running of foot clinic is not defined	**Structure:** Physiotherapists will provide triage service. Physiotherapist will treat all uncomplicated patients and only will refer complicated patients to the foot clinic. Responsibility: Physiotherapist will take the role of deciding treatment options. Role Defined: Physiotherapist will order equipments based on the cheapest quote available on the market. Defined individual accountably (Author & colleague Physiotherapist)
Culture: How things work in author's department: There is an erroneous belief that those patients whose shoes are one year old are entitled to a new pair of shoes every year, despite the good condition of the shoes. And it is a practice to replace those shoes due to high pressure from families, patients and referral sources. General consensus that whoever gets referred to foot clinic will receive a free pair of shoes. Current practice is agreed as norm.	**Culture:** Introducing the criteria for provision of footwear will start to reshape the minds of the people and this practice will change. Continuous education and communication will enhance better understanding of rights to receive free pair of shoes. New practice will be established as the way we do things here.

Appendix 11: Desired Integrated Care Pathway for general foot care



Appendix 12: Integrated care pathway for general foot care

HSE COMMUNITY UNIT - DUBLIN

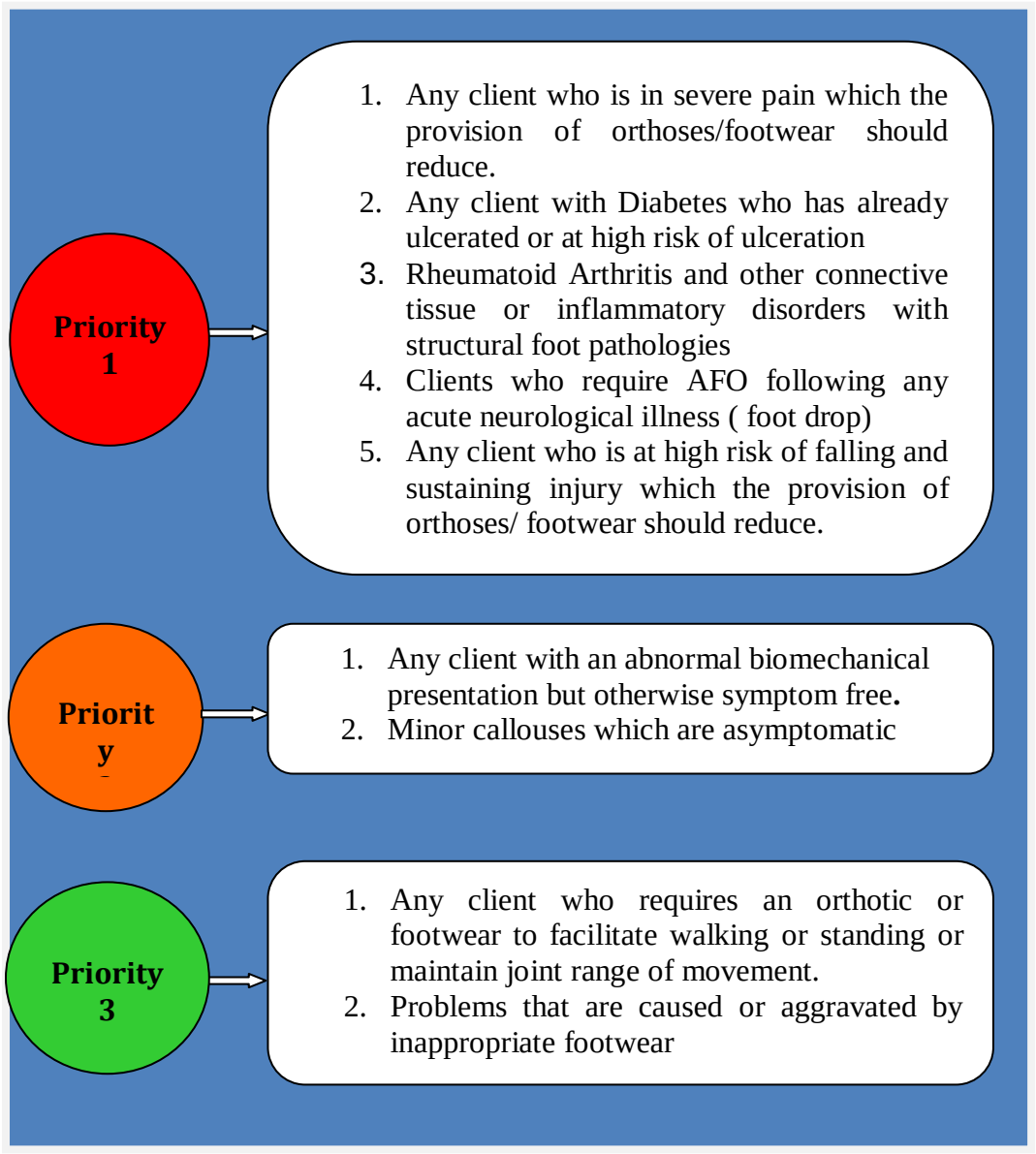
Feidhmeannacht na Seirbhíse Sláinte
Health Service Executive

Integrated Care Pathway For General Foot Care

Patients Name	
Patient Unique Identification Number (PUI number)	
Date of Birth	
Date of Admission	
Date of Referral	
Date of Discharge	
GP name	
NOK Name & Phone number:	

Developed by physiotherapy acting manager, senior physiotherapists, nurse manager.
Approved by physiotherapy manager & director of care.

FOOT CLINIC SCREENING AND PRIORITY STRATIFICATION



Inclusion Criteria:	Exclusion Criteria:
1. Over 65+ **2. Patient should be mobile** **3. Should fall under any one of the priority list.** **4. Strictly limited to long term residents, respite and day care clients.**	1. Clients outside catchment area 2. Less than 65 years of age & unnecessary upgrading of footwear/ orthotics

1

Nurse / MDT Foot screening and foot clinic referral form:

Feidhmeannacht na Seirbhíse Sláinte
Health Service Executive

Physiotherapy Dept,
Community Unit,
Dublin.

Name: **DOB:** **PUI Number:**

Medical Diagnosis:

……
……

Foot Screening:

Based on priority stratification please check the appropriate box:

Priority 1	Priority 2	Priority 3
Ask the patient	Yes	No
Rest pain		
Previous foot ulcer		
Feeling of foot numbness		
History of fall		
Reason for referral	Yes	No
Foot pain while walking		
Footwear assessment		
Assessment for orthotics		
Assessment for AFO/ Splints:		

Please mention any other issues:

……

Mobility Status:

Independent □	**Uses Walking Aid**	□ **Immobile** □	**Mobilises outdoors**

Other Information:

_____

Name of Referrer:

Signature: Contact Tel. No:

(Screening and referral form should be returned to physiotherapy department – Community Unit). 2

Physiotherapy Foot Assessment Form

Name: **DOB:** **PUI Number:**

Patient complaints	
Medical History	
Shoe size	
Type of shoe	
Standing posture	
Gait	

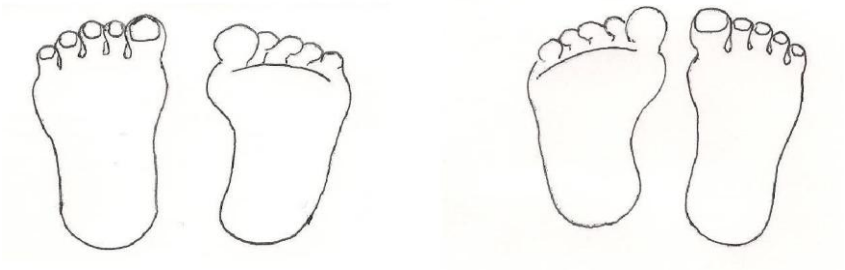
Is patient seeing anyone else for the current problem?

- ☐ Chiropodist / Podiatrist
- ☐ Orthotist
- ☐ Other physiotherapist
- ☐ General Practitionaire

Clinical Evaluation	Right	Left
Hip rom:		
Hip internal rotation		
External rotation		
Extension		
Knee Rom:		
Knee flexion		
Extension		
Ankle Rom:		
Plantarflexion		
Dorsiflexion		
Ankle inversion:		
Eversion		
Midtarsal:		
Oblique Axis		
Longitudinal		
1st MTP d/f		
Functional Hallux rigidutus / Limitus		

Body Chart

Right Foot **Left Foot**



Mark ☆ ○ ◇

For Bunion, For Corns, For Swelling

Treatment Plan:

Type of Footwear	Recommended Footwear
Normal shoes	
Standard medical shoes	
Modular shoes	
Customised shoes	

Type of Orthotics:	Recommended Orthotics
Off the shelf	
Semi custom made	
Custom made	
Heel raises	

Type of AFO/Splints	Recommended
Off the shelf	
Custom made	

Exercises & patient education on foot care: Yes/No

Action Plan:

Referral to specialist service:

- ☐ Chiropodist
- ☐ Orthotist
- ☐ Community physiotherapy services

Patient review date:

Name of physiotherapist:

Signature: *Date:*

4

Physiotherapy Progress Notes:

Feidhmeannacht na Seirbhíse Sláinte
Health Service Executive

Name:_____PUI Numner:_____Date:_____

Date		Signature

Variance Tracking Checklist

Physiotherapy Department Assessment – Integrated Care Pathway

Variance Analysis Checklist

Personal Details	
Name:	
Date of Birth	
Date:	

Checklist	Yes	No (if No mention reason)
Written referral received		
Patient triaged within 2 weeks		
Patient education provided		
Physiotherapy notes documented in SOAP format		
Follow up with the community services		
Patient paid for their own shoes		

For official use only	
Name of the assessor	
Date & sign	

Appendix 13:

Four Meeting Model using Blue skies thinking

Meeting 1: Preparation: Baseline data on patient/condition on which the ICP will focus was collected.	• Discussed about what an ICP is and current patient flow was process mapped. • Identified where the current care path will start and finish • Identified the stages of care in the ICP • Identified the patient admission and discharge criteria for the foot clinic. • Identified the perceived problems with the current care such as cost issues, documentation problems, and lack of educational resources for patient education and skills and training requirements for staff.
Meeting 2: Preparation: Each member of the team to confirm current perceived problems and agree on changes to be made.	• Agreed by team to make changes in what is necessary to improve current pathway in the foot clinic service. It was agreed to make changes to the structures and process.
Meeting 3: Preparation: Each professional within the team to identify his or her particular areas of responsibility within each stage of the ICP.	• Author took the major lead and responsibility in most of the stages of ICP but it was also re-enforced by line managers, nurse manager, day care coordinator and the physiotherapy staff. • Performance indicators were agreed, future state process map/ care pathway was finalised.
Meeting 4: Preparation: A draft copy of new care process (process map) was designed. Developing a plan for the ICP pilot phase	• The final care pathway is ready from implementation, the information leaflet was finalised and variance-tracking database was finalised, inclusion & exclusion were drafted.

Appendix 14: Education Session Content

Care of the Elderly

Elderly Foot & Footwear

Aims & Overview

- To develop an understanding on common foot pathologies in the elderly people.
- To gain more knowledge and insight into physiological changes in the ageing foot, footwear assessment and criteria's for referral to foot clinic
- **Over View:**
- Foot Health in older people
- Foot functions
- Elderly Foot
- Physiological changes in aging foot
- Common foot conditions
- Footwear

Overview

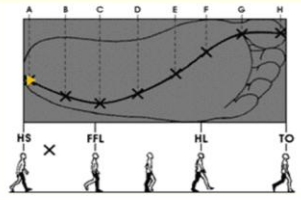
- Foot Health in older people
- Foot functions
- Elderly Foot
- Physiological changes in aging foot
- Common foot conditions
- Footwear

Foot health in older people

- 34% of over 65's complain of painful feet.
- Ill-fitting shoes related to self-reported pain.
- 72% ill-fitting shoes (Burns et al., 2002).
- 46% Irish older persons at risk due to dangerous footwear (Finlay, 1986).
- Cause of falls.
- High heels impair performance in standing balance tests in older women (Lord et al., 1996).
- Falls related hip fracture, many wearing hazardous shoes (Sherrington, 2003).

Foot Function

- Weight-bearing: transfer heel -> arch -> toes
- Shock absorption
- Mobility function
- Stability function



Elderly Foot

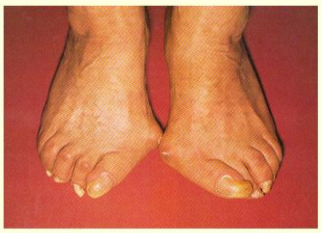
- Deformity
- Altered pressure points
- Infection
- Altered blood supply
- Atrophy - fat pad
- Callosities
- Corns & bunions
- Nail changes
- Joint & arch changes
- Muscle imbalance
- Pain

Physiological Changes

- ↑ skin dryness, fissuring & hyperkeratosis
- ↑ infection risk
- ↓ wound healing
- ↑ bruising
- ↑ time to treat nail infections
- ↑ osteoporosis risk
- ↑ fracture risk
- ↑ OA risk
- ↓ joint ROM
- ↑ tendon rupture risk
- ↓ balance
- ↑ falls risk
- ↑ joint & synovial stiffness
- ↓ synovial fluid

Foot conditions – OA foot

- Flattened arch
- Hallux valgus
- Splayed forefoot
- Corns
- Hammer toe
- Claw toe
- Weakened muscles
- Weakened ligaments

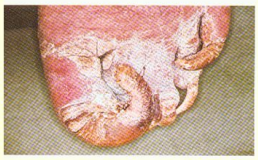


Hallus Valgus

- Valgus & rotational deformity of great toe at level MTP
- Swelling
- Bursal thickening
- Overgrowth of bone
- +/- Hallux rigidus

Onychomycosis

- Fungal infection of nail unit
- Destruction
- Hyperkeratosis
- Hypertrophy
- Deformed thick crumbly nail



Diabetic Foot

- Peripheral neuropathy
- Ischaemia
- Infection
- Tissue necrosis
- Ulceration
- Gangrene

GOUT

Signs gouty joint

- Finger / toe
- Red
- Warm
- Swelling
- Extreme tenderness
- Presence of tophi

Other Conditions

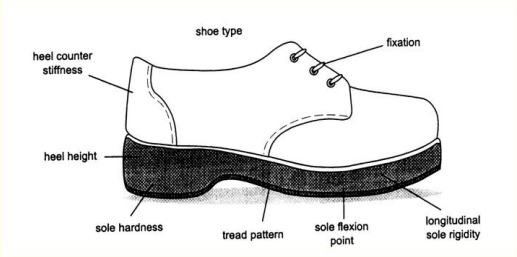
Hammer toes

Calluses, Corns

The Ideal Shoe

- Fit well
- Comfortable
- Safety
- Stability
- Ease to put on / off
- Fastening / unfastening
- Individual lifestyle
- Soft supportive uppers
- Lacing / velcro
- Closed toe box
- Nonslip
- Light
- Firm heel counter
- Flat wide heel

Shoe Characteristics



Menz and Sherrington (2000)

Foot Clinic - Care Pathway

- Referral Criteria
- Priority – 1,2 &3
- Open to Seanchara & St.Clare's Day Centre Clients
- LTC and respite clients
- Pilot Project for 3 months
- Making a referral – Completing the referral forms
- Transport Service
- Discharge Policy
- Frequency of revision

Referral To Physiotherapy

- Priority 1:
- Any client who is in severe pain which the provision of orthoses/footwear should reduce.
- Any client with Diabetes who has already ulcerated or at high risk of ulceration
- Rheumatoid Arthritis and other connective tissue or inflammatory disorders with structural foot pathologies
- Clients who require AFO following any acute neurological illness (foot drop)
- Any client who is at high risk of falling and sustaining injury which the provision of orthoses/ footwear should reduce.

Referral to Physiotherapy

- **Priority 2:**
- Any client who requires an orthotic / footwear to facilitate walking or standing or maintain joint position or range of movement.
- Problems that are caused or aggravated by inappropriate footwear
- **Priority 3:**
- Any client with an abnormal biomechanical presentation but otherwise symptom free
- Minor callous which are asymptomatic

Appendix 15:

DICE Framework

The factors that determine the outcome of any transformation initiative		Points	Dice Score = D+2(I)+2(C1)+C2+E		Zone
D.	Duration	2	2	10	'Win Zone' (Projects with scores between 7 – 14 are successful)
I.	Integrity	1	2		
C.	The commitment to change by to management (C1)	1	2		
	Commitment of employees affected by the change (C2) display	3	3		
E	Effort	1	1		

Interpretation:

DICE Score	Result
7 – 14	Successful
14 – 17	Unpredictable
17 and above	Unsuccessful

Sirkin *et al*. (2005)

Appendix 16: Information Leaflets

Personal Advice: _____
_____
_____
_____
_____

Your Physiotherapist: _____

Contact No: _____

Date Issued: _____

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What are Foot Orthotics?

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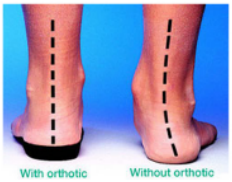
Health Service Executive

What are Orthotics?

Orthotics are corrective shoe inserts (insoles) that are put inside the shoes to help improve your foot posture, or the position of your hip and knees. Hip and knee pain are often associated with poor foot alignment and correction of foot allignment can often reduce the pain in these other joints.



Getting used to your orthotics:

Orthotics may take some to get used to. You may notice a number of new sensations like your feet rolling to one side or pressure under the arch. All of these sensations are normal and will improve after a proper break in period gradually as you break them in.
This could be between 2-4 weeks. If you find your insoles are still causing problems after four weeks, contact your physiotherapist.

- ☐ It is very important that you break in your insoles gradually.
- ☐ Aim for an hour the first day, two hours the next day and so on, until you build up to wearing them for a full day.
- ☐ Stop wearing your insoles for the reminder of that day if it causes you any discomfort. On the next day, do not increase the wearing time unless you feel comfortable.

Frequently asked questions

How do I take care of my orthotics?

Inspect your orthotics regularly. Remove insoles from your shoes and check the shoe for any debris that may have collected in your shoe. While you get used to insoles check your foot every day.

- ☐ If your insoles are a plastic rigid type they can be cleaned with mild soap and water and then wiped dry, otherwise wipe them with a damp cloth and leave them to air dry overnight.
- ☐ Do not put near radiators or any heat.
- ☐ Hand sanitizer and alcohol wipes may be used to clean the top cover of the insoles.

What kind of shoes do I need for accommodating my orthotics?

Any shoe that has a removable insole/ lining will work with your orthotics but strong supportive shoes with deep heel cup are ideal. Remove the insole that came with the shoes and replace it with the orthotics.

- ☐ Shoes with Velcro or laces are recommended as it will keep the insole secure within the shoe.
- ☐ It is recommended that the heel height of the shoe is not more than one inch unless your physiotherapist tells you otherwise.
- ☐ Always bring your orthotics with you when you are buying a new pair of shoes so that you can try them on in your new shoes before you buy.

Will my muscles get weaker if I use my orthotics?

- ☐ Orthotics will not weaken your muscles; in fact they will help your muscles to work more efficiently.

Your Physiotherapist: _____

Contact No: _____

Date Issued: _____

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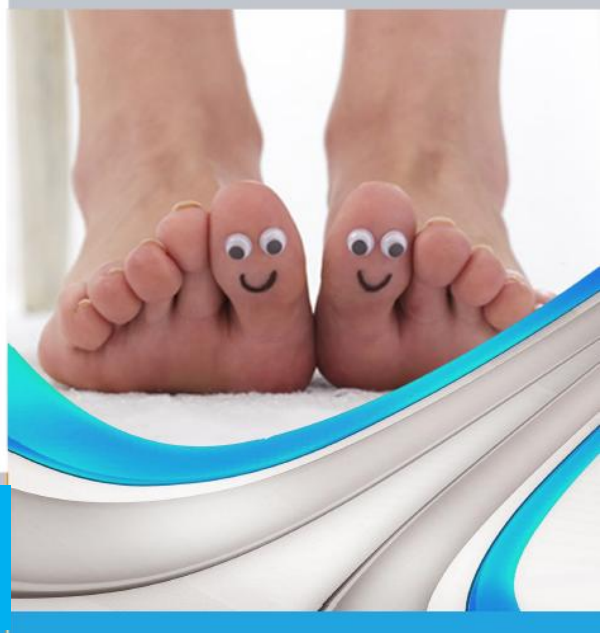
General Foot Care Tips

Feidhmeannacht na Seirbhíse Sláinte
Health Service Executive



General Foot Care Tips

- ☐ Inspect your feet daily for cuts, sores, pressure areas or any colour changes.
- ☐ Wash and moisturise you foot daily: Use warm water and mild soap to wash your feet.
- ☐ Dry your feet afterwards using a soft cotton towel, with special attention between the toes.
- ☐ Use a good moisturizer or lotion on your feet that does not contain alcohol, avoiding the area between the toes.
- ☐ Never go barefoot, Walking with socks or stockings will increase the risk of falls and should be avoided.
- ☐ Clean socks or stocking should be worn.
- ☐ Choose socks made of cotton or wool, since they will keep moisture away from your skin, and make sure there are no seams or bumps.
- ☐ If you choose to wear slippers, it is important to ensure that they are supportive in nature and they have antislip soles.
- ☐ As you go older it is important to see a chiropodist on a regular basis, especially if you suffer from diabetes or decreased sensation in the foot.
- ☐ Smoking decreases circulation to feet, so it should be avoided.

CAUTION: Avoid sitting for long periods.

Some general exercises:

Try to walk every half hour. Walking improves blood supply to your feet. Encourage good blood flow to your feet by exercising your leg muscles when sitting: move your feet in a circular motion, clockwise and then anticlockwise.

1. Sit. Bend and straighten your ankles. Repeat ___ times.

2. Lying or sitting.Bend and straighten your toes briskly. Repeat ___ times

3. Sit with your foot on the floor. Keeping your big toe on the floor lift the other toes up. Repeat ___ times.

4. Sit on a chair. Pull your toes up, tighten your thigh muscle and straighten your knee. Hold approx. 5 secs and slowly relax your leg. Repeat ___ times.

5. Sitting or lying. Rotate your ankle. Change directions. Repeat ___ times

When to contact your service provider:

If you develop any blisters or redness that does not go away
If you can no longer use what you have been issued by the foot clinic service, due to swelling or difficulty in putting the footwear on.

Personal Note : _____
_____
_____
_____
_____

Your Physiotherapist: _____

Contact No: _____

Date Issued: _____

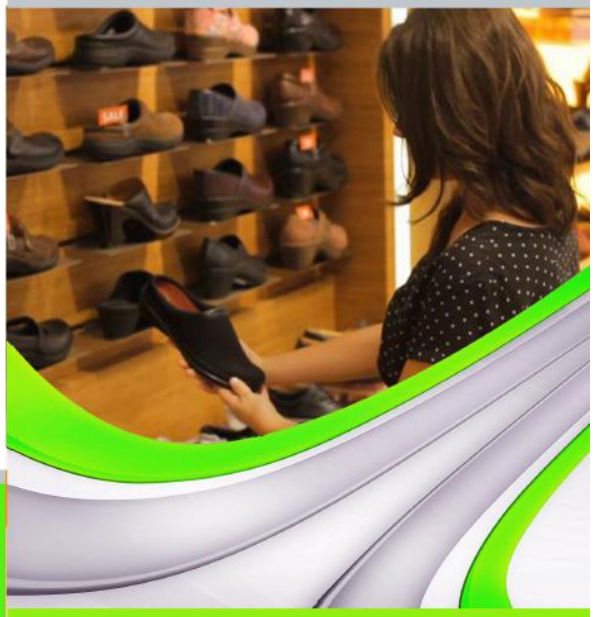
Feidhmeannacht na Seirbhíse Sláinte
Health Service Executive

Disclaimer

Claremont Services
St.Canice's Road
Glasnevin,
Dublin-11

Tips when buying footwear

Feidhmeannacht na Seirbhíse Sláinte
Health Service Executive

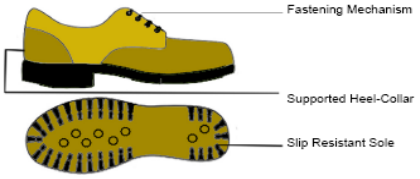


Tips when buying footwear:

Most foot problems can be managed with shoes from an ordinary shoe store. Footwear plays an important role in keeping your foot healthy. Footwear influences your balance and walking and so shoes must be chosen carefully.

- Your shoes should be comfortable and fit well – Easy to put on and take.
- It is best to have laced –up shoes or shoes with Velcro strap, so that your feet will be held firmly during walking. Your shoes should not slip on your foot
- Low heeled shoes are recommended as high heeled shoes affect posture, balance and walking.
- The sole of the shoe must be strong, waterproof and provide good support and stability. Test the sole by holding the shoe between both hands and gently apply pressure. There should be a bit of resistance, you should notice a small bend near the toe area. If it does not bend at all or bends very easily, it may not be an appropriate shoe for you.
- The back of your shoes (heel collar) should be firm. This can be tested by pressing the heel collar between your index finger and thumb.
- A closed, spacious toe box is recommended.
- No pressure should be felt on the end of the longest toe
- The inside of the shoe should be soft and flexible- if possible without seams. This can be tested by feeling inside the shoe
- If you have an insole or AFO bring it with you to the shoe shop to try them in the new shoes.
- To be sure the shoes are suitable for you, test walk on a solid area of the store and not on the carpeted floor.

These are just general tips for information purpose only and no two people needs are identical, e.g. a broad toe box would not necessarily be appropriate for an individual with a long, narrow, pointed forefoot.



Getting used to your new shoes:

It might take a few weeks for your feet to adjust and feel comfortable in your new shoes. During this time you should only wear your footwear for short periods.

Only wear your footwear for 30-60 minutes on the first day. Check your skin for signs of redness, blistering or skin breakdown. If there are no concerns, wear your footwear for another hour and check again.

You may need a week to get used to your footwear. Some people can take as long as two to three weeks to get used to new shoes.

Be sure to check inside your shoes before putting them on for objects, rough spots or exposed nails.

If you feel any prolonged discomfort, rubbing or chafing, you should contact the shoe provider for a review and must bring your shoes with you for the review appointment.

Footwear Maintenance guidelines:

Please refer to manufacturer's specifications and maintenance guide.
It is very important that your footwear is kept in good condition; especially the Velcro which should be kept clean.
It is your responsibility to make sure that your footwear is properly maintained
Keep the footwear clean and polished.
Allow wet shoes to dry naturally, away from direct heat. You may also want to pack them with newspaper to keep their shape.
When the heels or soles are worn, take them to a good shoe repairer to have them repaired.

Personal Note : _____

_____

_____

_____

_____

Your Physiotherapist: _____

Contact No: _____

Date Issued: _____

Feidhmeannacht na Seirbhíse Sláinte
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Ankle Foot Orthosis (AFO)

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Health Service Executive

What is an AFO? (Ankle foot orthosis)

An AFO is an "L" shaped brace that supports the ankle and at least part of the foot to hold your foot and ankle in a better position. Using an AFO helps to improve your walking and prevent your calf muscle from getting tight. AFOs are commonly used to treat foot drop.

Putting on your AFO

It is important that you put your AFO on properly to make sure it is comfortable: A close fitting cotton sock should be worn between your skin and AFO.

- ☐ You may find putting your AFO into your shoe first and then putting on the shoes with the brace already in it is the easiest way to apply it.
- ☐ Ensure that your heel is firmly inserted into the AFO and the straps fastened securely.
- ☐ Sometimes you may need to change your footwear to allow for the splint

Footwear Selection:

Putting footwear on and off may be more difficult when wearing an AFO, so footwear with a low opening such as runners or shoes with laces may be helpful. You may need to use a long handled shoehorn.

Effective heel height = 10mm

There are a few things that you should consider when deciding on footwear:

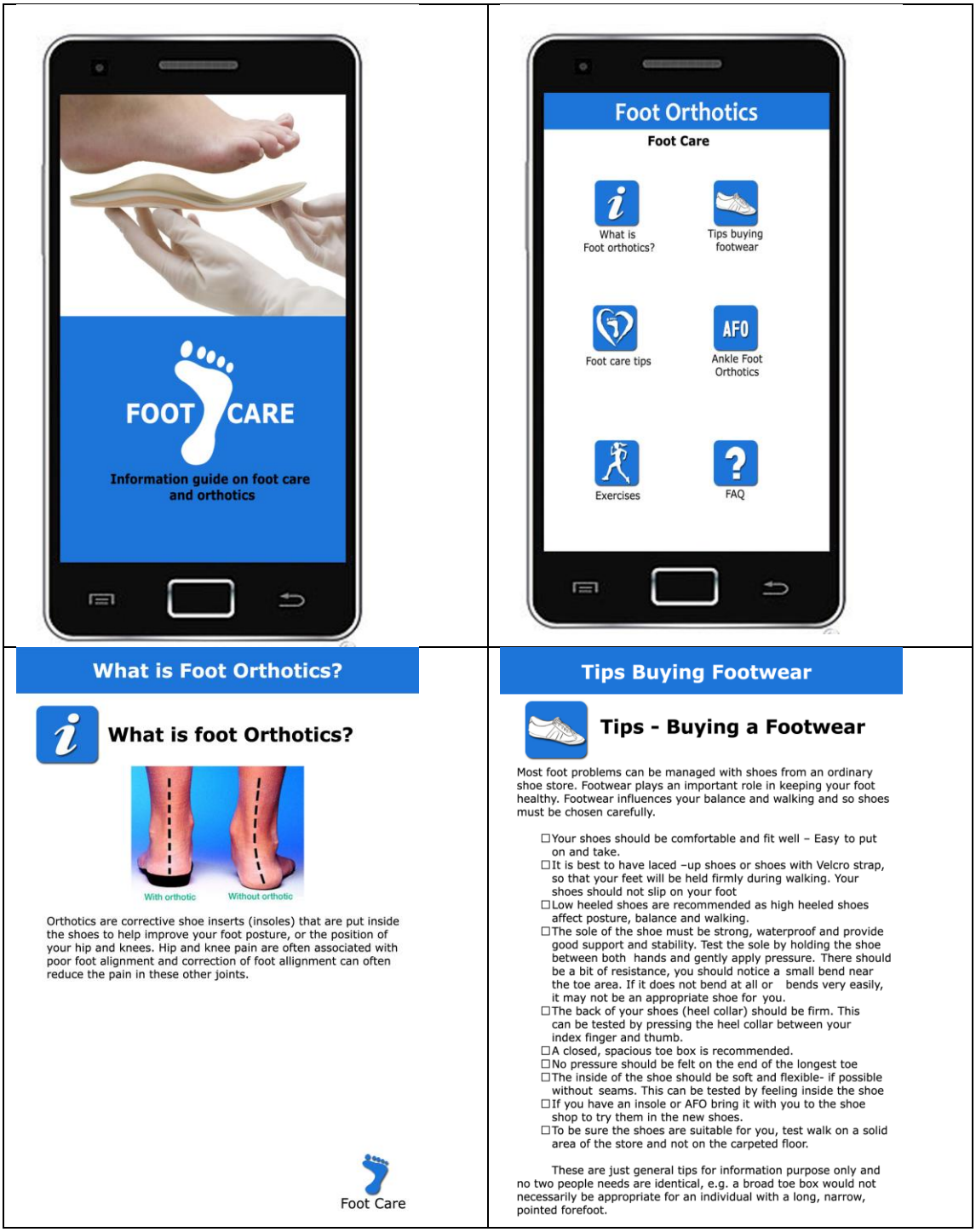
- ☐ If you are buying footwear always take your AFO with you.
- ☐ Lace-ups or Velcro fastenings are preferred as they give the most adjustment.
- ☐ A removable shoe liner/ insole are useful, providing more room within the foot wear.
- ☐ A heel no higher than 1.5cm is recommended unless your physiotherapist suggests otherwise.

Wearing and care of your AFO

- ☐ Your AFO is to be worn as much as possible whilst walking; as it will help keep your foot stable and help you walk more efficiently.
- ☐ It is very important that you break in your AFO slowly. Begin by using your AFO for an hour the first day, increase to two hours the next day and so on until you build up the wearing time to a full day.
- ☐ Examine your skin under the AFO every day, checking for redness or irritation. Redness should disappear after 20-30 mins. If the redness does not disappear, stop wearing the AFO and contact your physiotherapist.
- ☐ Your AFO can be cleaned with a damp cloth and towels dried but please check the product instruction manual if available.

Appendix 17:

Mobile phone app



Appendix 18: Likert style Questionnaire

Circle 1 – 5 with your evaluation.	**Strongly Agree**	**Agree**	**Agree/ Disagree**	**Disagree**	**Strongly disagree**
1. The overall experience of the training was positive.	1	2	3	4	5
2. Since the workshop, I gained more knowledge on common foot conditions in elderly people.	1	2	3	4	5
3. The materials provided to me were informative.	1	2	3	4	5
4. The pace and style of the presentation was effective.	1	2	3	4	5
5. The workshop design and content were appropriate.	1	2	3	4	5
6. Participation was encouraged.	1	2	3	4	5
7. The instructors responded to questions effectively.	1	2	3	4	5
8. The presenter(s) was knowledgeable about the subject.	1	2	3	4	5
9. The instructor kept the session live and interesting	1	2	3	4	5
10. Would you recommend this training programme to your colleague	1	2	3	4	5

COMMENTS:

What would have made the session more effective:

……

……

Appendix 19: Questionnaire

Speaker: **Date:** 2013- 2014
Title of workshop: Common foot conditions in elderly (Elderly foot & Footwear)

1.	Ill – fitting footwear is a cause of falls in older adults.	True	False
2.	Wearing High heels improves balance in older women	True	False
3.	Verbal referral to foot clinic services is a good practice	True	False
4.	Is this Hallus Valgus deformity? 	True	False
5.	The ideal Shoe must have slip resistant soles and a closed toe box.	True	False
6.	Any patient who is in severe pain which the provision of orthoses/footwear should reduce Is this criterion Priority 1	True	False
7.	In total there are 26 bones in the foot	True	False
8.	Any patient who is immobile is a Priority 1 for physiotherapy foot clinic referral.	True	False
9.	Any patient who requires an Orthotic/ footwear to facilitate walking or standing or maintain joint position or range of movementis is considered priority 2 for foot clinic referral.	True	False
10.	This condition is called GOUT 	True	False

Appendix 20:Physiotherapy documentation audit form

LHO Dublin North Central
Physiotherapy Department

Date of Audit: Client Number: PT Initials: (being audited) PT Initials: (completing audit)

Administrative Audit	**Pass**	**Fail**	**N/A**
1. Permanent black pen only	☐	☐	☐
2. Consent documented on initial contact	☐	☐	☐
3. Client Contact details completed	☐	☐	☐
a. Name		(total: /7)	
b. Address			
c. Contact Number			
d. Date of Birth			
e. Medical Card Number or equivalent			
f. GP			
g. Next of Kin			
4. Client's name, date of birth or client number completed on the assessment form and each progress page.	☐	☐ (total: /2)	☐
5. SOAP Notes followed	☐	☐	☐
6. No spare lines or line through blank spaces with Initials	☐	☐	☐
7. Name printed, signed and title on each page	☐	☐	☐
8. Each entry is signed	☐	☐	☐
9. Mistakes corrected with single line and initials	☐	☐	☐
10. Legible should be able to be read by lay person	☐	☐	☐
11. No correction fluid	☐	☐	☐
12. Abbreviation in line with HSE or abbreviation is written with full explanation once on each page	☐	☐	☐

Total: $\frac{\text{Number of Items Passed}}{\text{Total No of Items Audited}} = \_\_\_\_\_ \times \frac{100}{1} = \_\_\_\_\_$ % Accuracy

Appendix 21:
Poster produced for dissemination of the change project

Implementing an Integrated Care Pathway for general foot care

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MSc Healthcare Management, Institute of Leadership, Royal College of Surgeons in Ireland

Introduction & Background

Foot problems can lead to discomfort, ulceration, pain and increased risk of falling in older people.[1] Good and timely foot care can help individuals remain independent, mobile and prevent footwear related falls.[2] Internal audit revealed a lack of adherence to best practice standards, variations in practice and increased operational costs. Integrated care pathway (ICP) are internationally accepted innovative tools which can help deliver a standardised, quality and cost efficient service.[3]

Aims & Objectives

Aims:
To design and implement an ICP into foot clinic services using SMART objectives.

Objectives:
➢To reduce variance in practice e.g. inappropriate referrals.
➢To reduce appointment waiting times.
➢To improve documentation practices.
➢To undertake & evaluate a staff awareness training programme & develop a supporting information booklet and mobile phone application for patient & staff.
➢To reduce overall costs.

Methodology

The HSE change model was chosen for its flexibility and applicability.

Methodology

Initiation:
Identifying the need for change – Process Mapping and Root Cause analysis
Need for ICP tool agreed by MDT
Stakeholder Analysis & FFA

Planning:
ICP designed (fig 1) and education programme for staff delivered.
Data collection completed.
Implementation plan developed

Implementation:
New ICP implemented on agreed date.
Constant communication with staff members. Data collected and evaluated.
Short term wins achieved.

Mainstreaming:
Evaluation using PDSA
Relentless scanning and support provided to ensure traditional practices are phased out to sustain new practice.

Figure 1 : ICP for general foot care and Information leaflet on foot care

Fig2 : Mobile application on foot care was developed and is available for download from Google play store

Evaluation

ICP was implemented, variations in practice were measured.
➢Kirkpatrick's model for evaluating training was used (fig.3)

Figure 3: Pre and Post training results

Evaluation

➢ Pre ICP implementation appointment waiting time for foot clinic was 4 weeks in average. Waiting times reduced by nearly 50% post implementation (Fig 4).

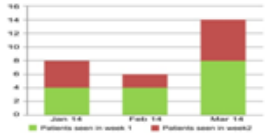

Figure 4: Reduction in patients waiting time noted

➢Document audit achieved 100% accuracy in 3 months (fig.5)

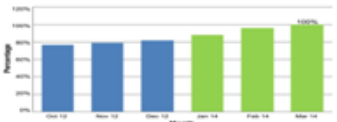

Figure 5: Document standards achieved 100% accuracy

➢ Reduction in inappropriate referrals noted but still variations present .
➢Average cost of footwear was reduced significantly.

Organisational Impact

➢Standardisation of care process achieved.
➢Compliance with best standards ensured.
➢Culture of continuous quality improvement and team working enhanced.

Conclusion

Successful change project has been implemented. Changes to existing structures, process and cultures are required when introducing ICPs.

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1. National Health Service (2013). Personal Footcare Guidance. The Scottish Government, Edinburgh.
2. Menant, J.C., Steele, J.R., Menz, H.B., Munroe, B.J., Lord S.R. (2008). Optimizing footwear for older people at risk of falls. *Journal of Rehabilitation Research & Development*, 45(8): 1167-1182.
3. National Council for the Professional Development of Nursing and Midwifery (2006). *A guide to inform nurses and midwifes on the process of implementation of integrated care pathways. Improving the patient Journey: Understanding integrated care pathways*, Dublin.